CORPORATE
OWNERSHIP & CONTROL

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www.virtusinterpress.org

Journal Corporate Ownership & Control is published four times a year, in September-November, December-February, March-May and June-August, by Publishing House "Virtus Interpress", Gagarina Str. 9, office 311, Sumy, 40000, Ukraine.

Information for subscribers: New orders requests should be addressed to the Editor by e-mail.

Back issues: Single issues are available from the Editor. Details, including prices, are available upon request.

Advertising: For details, please, contact the Editor of the journal.

Corporate Ownership & Control

ISSN 1727-9232 (printed version)
1810-0368 (CD version)
1810-3057 (online version)

CORPORATE OWNERSHIP & CONTROL

VOLUME 14, ISSUE 2, WINTER 2017, CONTINUED - 2

CONTENTS

DETECTING TAX EVASION WHEN TAX AND ACCOUNTING EARNINGS MATCH

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Abstract

The main purpose of the present study is to examine the tax behaviour of listed companies when operating in an accounting environment characterized by a high level of book – tax conformity. According to international practice, tax evasion is estimated by using two different measures: the tax evasion rate and the tax gap. After identifying the extent of tax evasion, a number of financial statement variables are examined in order to assess the financial characteristics of the tax aggressive firms. Companies with higher rates of tax evasion have more liquidity, more debt (especially short-term liabilities), are less effective and efficient in generating earnings and are smaller in size. Companies with higher amounts of tax gap are larger in size, have more liquidity, more debt (especially short-term liabilities) and are more effective. The outcomes of the present study may assist public bodies, such as tax authorities and regulatory bodies, as well as audit firms in detecting and deterring tax evasion.

Keywords: Earnings Manipulation, Book-Tax Conformity, Tax Evasion, Fraudulent Financial Reporting, Auditing
JEL Classification: M41, M42
DOI: 10.22495/cocv14i2c2p1

1. INTRODUCTION

Although there is an extensive literature on corporate fraud and specifically on fraudulent financial reporting, a number of studies highlight the need for more research on corporate tax evasion as it has received relatively limited attention (Crocker and Slemrod, 2005; Tedds, 2006; Frank et al., 2009). This gap in the extant literature can be attributed to two reasons. The first one concerns the lack of available data regarding the outcome of the tax audits (Slemrod, 2004; Tedds, 2006; Frank et al., 2009). The second reason lies with the belief, widely held until recently, that the primary incentive of the listed companies is to inflate accounting earnings even at the cost of bearing a higher corporate tax (Mills and Newberry, 2001; Erickson et al., 2004). However, a number of egregious accounting scandals, involving companies like Enron, WorldCom and Tyco, have shown that companies may simultaneously evade taxes and manipulate accounting earnings upwards by using tax shelters (Slemrod, 2004; Desai, 2005; Desai and Dharmapala, 2009).

Following this spate of accounting scandals, accounting literature experienced a proliferation of studies in two main streams of research. The first one examines the divergent incentives of the firms when reporting for tax and for financial accounting purposes. Specifically, when managers manipulate accounting earnings upwards, they have to choose between inflating taxable income and consequently paying extra taxes or reporting the actual income to the tax authority and reporting a book-tax difference in their financial statements. Similarly, when a firm adopts a tax aggressive position it faces the question of whether to report lower accounting earnings or to disclose the book-tax difference (Hanlon and Heitzman, 2010). The extent of book-tax differences and the level of total or discretionary accruals has been the focus of a large body of academic research regarding earnings management (Hanlon and Heitzman, 2010; Dechow et al., 2012).

The second stream of research that has recently attracted the attention of the scholars is the conformity between taxable and accounting earnings as a means to enhance financial reporting and restrain tax aggressiveness. Proponents argue that the alignment between taxable and accounting earnings will reduce aggressive financial reporting, since this would inevitably incur tax costs, and at the same time it will curtail tax aggressiveness as firms will avoid reporting lower profits to the shareholders (Desai, 2005; Whitaker, 2005). On the other hand, opponents of book-tax conformity claim that conformity will deteriorate the informativeness of earnings as tax policymakers will interfere in the standard-setting process and tax goals may prevail over reporting high earnings to capital markets (Hanlon et al., 2005; Hanlon et al., 2008; Atwood et al., 2012).

A monitoring mechanism that may affect managers' reporting decisions and mitigate corporate tax non-compliance, is tax enforcement (Hanlon et al., 2008). Certainly, firms are eager to engage in tax planning in order to save taxes. However, firms may also consider the potential costs of such a strategy, meaning the imposition of a severe amount of fines and penalties by the tax authority in case of detection (Wilson, 2009). Moreover, the propensity of the firms to evade taxes may also relate to their aversion to being labeled tax aggressive (Slemrod, 2004; Hanlon and Slemrod, 2009). Hoopes et al. (2012) provide evidence that U.S. public firms undertake less aggressive tax positions when tax enforcement is stricter while Hanlon et al. (2014) report that higher tax enforcement by the tax authority is closely linked to enhanced financial reporting quality.

The present paper builds on extant literature by examining the tax behaviour of the Greek public companies (listed on Athens Stock Exchange) when they operated in an accounting environment characterized by a high level of book – tax conformity (one-book system)[1]. Specifically, the paper focuses on the period 2000-2004, since in 2005 Greece adopted International Financial Reporting Standards (IFRS) and moved from a one-book to a two-book system. As noted above, the separation between tax and financial reporting alters managers' reporting incentives. According to the Athens Stock Exchange Regulation, the Greek public companies are obligated to be frequently audited and to disclose the outcome of the tax audit. These company announcements provide a unique database of tax audit records. Overall, the results indicate that tax evasion of public companies is widespread in a highly aligned book-tax system. This constitutes downwards earnings manipulation. Additionally, the extent of tax evasion is found to be closely linked to firm size, effectiveness, debt burden, liquidity and audit firm.

The findings make several contributions to the literature. First, corporate tax aggressiveness is examined by relying on tax audit data. Relevant research is limited as the outcomes of the tax audits are confidential in most countries (Slemrod, 2004; Tedds, 2006; Frank et al., 2009) and researchers resort to the development of proxies in order to capture tax avoidance, tax aggressiveness and tax sheltering activities (Lietz, 2013). Second, the examination of corporate tax behaviour in a one-book system contributes to the debate about the costs and benefits of conforming book and taxable income. Empirical work on this relation is limited and calls for further research (Hanlon and Heitzman, 2010; Tang, 2015). Third, corporate reporting behaviour is examined when managers actually face the trade-off between tax evasion and reported profitability. Relevant research is based on the development of proxies for book-tax conformity (Atwood et al., 2012; Watrin et al., 2014; Tang, 2015; Blaylock et al., 2015).

Fourth, there is a growing literature examining the tax positions that firms undertake when the likelihood of a tax audit is high (Hoopes et al., 2012). The paper contributes to this line of research as it examines the tax behaviour of public firms that have the obligation to be frequently audited. Fifth, the paper investigates the relative significance of different firm characteristics regarding the intensity of tax evasion and builds a prediction model. This could be of use to the public bodies, such as tax authorities and regulatory bodies, as well as to the audit firms, in their efforts to detect and deter tax evasion.

The rest of the paper proceeds as follows. In section 2 the Greek accounting setting is described. Section 3 presents the methodology for determining the extent of tax evasion. In section 4 the sample of the study is described. Section 5 covers literature review. Sections 6 and 7 present the empirical results regarding the prediction of the rate of tax evasion and the tax gap respectively. Section 8 concludes the study.

2. THE GREEK ACCOUNTING SETTING

Corporate tax evasion is a matter of primary importance with regard to a country's economic development and prosperity as it reduces public revenues and causes unfair competition in the marketplace. Nowadays, this issue has become even more crucial for Greece which is in the middle of the financial crisis and its economy relies heavily on financial support from the European Union, the International Monetary Fund and the European Central Bank. Government efforts to reduce budget deficit focus largely on tax policy and particularly on methods used to suppress tax evasion. The impact of the financial crisis became evident in the marketplace and Greece, which had been classified as a developed market since May 2001 according to MSCI index, was relegated back to an emerging market in November 2013. The Hellenic Capital Market Commission (HCMC) is the public body responsible for the regulation and monitoring of the capital market.

The Greek accounting framework has traditionally been tax-oriented (Ballas et al., 2010). Prior to the mandatory adoption of International Financial Reporting Standards (IFRS) in 2005, both public and private companies in Greece had their financial statements prepared according to the Greek GAAP. Since 2005, public firms publish their financial statements in accordance with IFRS whereas they apply Greek GAAP for tax purposes. Private companies still apply Greek GAAP both for financial reporting and for tax purposes. Therefore, the accounting regime that applies for public companies can be characterized as a "one-book system" before 2005 and a "two-book system" after 2005. The Greek GAAP emphasizes financial reporting conformity with tax rules (Spathis and Georgakopoulou, 2007), relies on historical-cost accounting measures, does not recognize fair value measurement and does not recognize the concepts of deferred tax (Tsalavoutas and Evans, 2010).

3. METHODOLOGY FOR DETERMINING THE EXTENT OF TAX EVASION

Public companies in Greece have to prepare three accounting statements: the tax statement, the parent-only financial statement and the consolidated financial statement. For the period under study (2000-2004), Greek GAAP was applicable for all three statements. Each company of the consolidated group is treated as a single entity for tax purposes. This means that the tax statement of the parent company is prepared on a single entity basis and not on a group basis. Corporate profits are taxed at a flat rate.

According to Athens Stock Exchange Regulation, the Greek public companies are obligated to be audited by the Internal Revenue Service frequently and to disclose the outcome of the tax audit on the website of Athens Stock Exchange (A.S.E.) as well as on their website for at

1 A "one-book system" refers to a system where the same accounting standards (local GAAP) apply both for financial and tax reporting. When IFRS are applied for financial reporting and local GAAP for tax reporting it is called a "two-book system".

least a year. They are also obliged to reveal the outcome of the most recent tax audits in any new prospectus that they release (i.e. in case of issuance of new shares, of a merger or an acquisition). These announcements and prospectuses, which are under the scrutiny of the Hellenic Capital Market Commission, are used as the main source of information for estimating the extent of tax evasion.

Although public firms must regularly be audited by the IRS, a tax audit takes place 3 to 4 years, on the average, after the fiscal year which it relates. The president of the Hellenic Capital Market Commission has often called for more timely tax enforcement. The audit is conducted at the business location and may cover one or more years. Regardless of the number of years that are audited, a separate report is prepared for each year. In case the audit reveals underreporting of income, the auditor charges the additional taxes that are owed and imposes extra fines and penalties. The penalties that are imposed are determined by law and depend on the extent of underreporting and the type of the tax misstatement.

The extent of tax evasion is measured either as the difference between the taxes owed and the taxes actually paid (tax gap) or as the ratio of the reported to true tax liability (Andreoni et al., 1998; O.E.C.D., 2001; Slemrod, 2004; Hanlon et al., 2007). The two measures are expressed as follows:

$$\begin{aligned} \text{Tax Gap} &= \text{Post-Audit Tax Liability} - \text{Pre-Audit Tax Liability} = \\ &= (\text{Taxes Declared} + \text{Additional Tax Assessments}) - \text{Taxes Declared} = \text{Additional Tax Assessments} \end{aligned} \tag{1}$$

$$\begin{aligned} \text{Tax Compliance (\%)} &= (\text{Pre-Audit Tax Liability} / \text{Post-Audit Tax Liability}) \times 100 = \\ &= \{\text{Taxes Declared} / (\text{Taxes Declared} + \text{Additional Tax Assessments})\} \times 100 \end{aligned} \tag{2}$$

When tax compliance is expressed as a ratio, tax evasion is estimated as follows:

$$\text{Tax Evasion (\%)} = 100\% - \text{tax compliance (\%)} \tag{3}$$

The tax gap and the rate of tax evasion do not necessarily follow the same pattern. Holding the amount of the tax gap constant, a more profitable company will exhibit a lower tax evasion rate than a less profitable one. Examining earnings management strategies, Badertscher et al. (2009) focus on the rate of nonconforming earnings management rather than on the total amount. On the other hand, Hanlon et al. (2007) rely on the tax gap and not on the tax evasion rate. As they state: "when the reported tax is zero but there is a proposed deficiency of any magnitude the proposed deficiency rate becomes 100%, not distinguishing between firms that underreport $10 of tax and those that underreport $1 million of tax". In the present paper, both measures of tax evasion are analyzed as they convey different information regarding the extent of tax non-compliance.

It must be noted that consistent with prior studies (Hanlon et al., 2005; Atwood et al., 2012; Hoopes et al., 2012; Tang, 2015) the analysis is limited to profitable firms. A tax audit may detect underreporting of income in an unprofitable company which will probably not result in an increase in its tax liability. The reported income will merely be adjusted upwards (i.e. the income will still be negative but less than the one initially reported), resulting in a decrease in the tax loss carryforwards which offset future taxable income. The way that the existence of losses affects reporting behaviour is not examined in the present paper. According to Hanlon and Heitzman (2010) this is still an "open area to explore".

The amount of "additional tax assessments" that is taken into account comprises both the additional taxes owed and the fines and penalties that are imposed by the tax authority. This is primary due to the availability of data since the fines and penalties are not reported separately. This is a limitation of the current study. Nonetheless, the aggregate amount of the tax audit is not used arbitrarily. The public companies that are examined are aware that they will be audited by the IRS in the following years. This means that the cost of the fines and penalties (that may be imposed) has been taken into account when they decide to underreport their income (Wilson, 2009). Moreover, it is the total amount imposed by the tax audit, and not just the extra taxes owed, that affects the cash flow of the firm and investor wealth (Crocker and Slemrod, 2005).

4. SAMPLE OF THE STUDY

The sample of the study consists of the public companies listed on Athens Stock Exchange (A.S.E.) in years 2000-2004. The total number of companies amounts to 318. However, 21 companies were initially excluded because of their special characteristics. Specifically, the 10 companies of the "Equity Investment Instruments" sector were excluded as they are taxed under a special tax regime. According to Law 2579/1998, they are obligated to pay an annual tax of 3‰ on the average sum of their investments and cash. The 7 companies of the "Travel & Tourism" sector were also excluded as they are subject to a special tax based on the total gross tonnage of their ships (Law 27/1975). Two foreign companies were also dropped as they are not subject to the Greek tax law as well as two companies (i.e. the Bank of Greece and the Stock Exchange SA) whose shares are not traded. Following international practice (Tsalavoutas and Evans, 2010), 34 companies belonging to the banking, insurance and financial services sector were excluded due to their specific accounting and reporting requirements. The reduced sample comprises 263 listed companies.

The study focuses on the five year period 2000-2004. Years prior to 2000 are not examined because the Athens Stock Exchange crashed in 1999 (Louzis and Vouldis, 2013) and this might have significantly affected reporting incentives. Years after 2004 are also excluded from the analysis since Greek public companies moved from a one-book to a two-book system in 2005 with the mandatory adoption of IFRS. By manually examining companies' announcements and prospectuses data were acquired for the 134 out of the 263 companies of the sample. By eliminating unprofitable firms, the final sample is reduced to 116 firms (305 firm-years). In all cases the IRS estimated that the companies did not comply with the tax law and imposed extra taxes plus fines and penalties.

The results provide evidence that tax evasion is widespread among public firms in a highly aligned book-tax system, complementing the study of Watrin et al. (2014) who report that high conformity between the single financial statement and the tax statement is associated with more downward earnings management. However, beyond the obvious incentive of saving money, strict tax enforcement may have also affected corporate reporting behaviour. Slemrod et al. (2001) posit that high-income taxpayers evade more taxes when they are certain that they will be audited by the IRS in order to ensure that their after-audit tax liability remains stable. Hoopes et al. (2012) parallel the tax reporting behaviour of firms to that of wealthy individuals, undertaking more aggressive tax positions when a tax audit is likely to occur so as to provide some negotiating room.

Although for the majority of the companies the outcome of the tax audit was available for more than one year, it was possible to obtain data for the whole period (2000-2004) only for the 14 out of the 116 companies of the sample. On the contrary, for 19 companies there are available data for four years, for 25 companies for three years, for 26 of the companies the data cover two years and for the rest 32 companies the outcome of the tax audit is only known for a year. Due to data limitation, the application of cross-sectional analysis was preferred to panel data analysis. Consistent with prior studies (Mohd Nor et al., 2010), the latest (most recent) audited year of each company was taken into account to assemble the sample. Consequently, the final sample consists of 116 observations/ companies, 47 of which refer to 2004, 15 observations to 2003, 21 observations to 2002, 19 observations to 2001 and 14 observations for the year 2000.

As previously noted, the IRS revealed underreporting of income in all firm-years that were audited. Due to the short timeframe under study and taking into account that corporate tax law did not experience significant changes during that period, it is not anticipated that the year to which the audit refers has an impact on the extent of tax evasion. However, similar to Hanlon et al. (2007), a year dummy is included in the regression analysis to control for year effects. Moreover, a number of non-parametric tests are applied so as to examine whether there are any significant differences in the extent of tax evasion between the five years under study. Consistent with expectations, no significant differences were found[2].

Table 1 shows some descriptive statistics of the sample. The mean rate of tax evasion is estimated at 22.64% while the mean value of tax gap reaches €365,316. Both measures of tax evasion present high variability. Specifically, the rate of tax evasion ranges from 0.02% to 98.33% while it takes values between 7.36% and 32.11% for about half of the companies. Similarly, the amount of tax gap ranges from €4,030 to €3,747,719 for the whole sample and between €62,257 and €349,280 for about half of the companies. The coefficient of variation is calculated at 98% for the rate of tax evasion and at 171% for the tax gap.

Table 1. Descriptive statistics of the rate of tax evasion and of the tax gap

		% Tax Evasion	*Tax Gap*
Mean		22.64	365,316
Median		13.28	134,292
Standard deviation		22.19	625,343
Variation		492.34	391,053,841,673
Range		98.31	3,743,688
Minimum value		0.02	4,030
Maximum value		98.33	3,747,719
Quartiles	25	7.36	62,257
	50	13.28	134,292
	75	32.11	349,280

5. LITERATURE REVIEW

Accounting literature on corporate tax avoidance and evasion is relatively young and lacks a well-documented theoretical background (Tedds, 2006; Hanlon and Heitzman, 2010). On the contrary, there is an extensive literature examining firm-level determinants associated with fraudulent financial reporting. An outline of the findings of these studies is provided in Table 2. However, most of these studies focus on upward earnings management in a dual-reporting system (i.e. preparation of different reports for tax and financial accounting purposes) whereas the present paper focuses on corporate tax evasion (downward earnings management) in an accounting environment characterized by a high level of book – tax conformity (one-book system) where no deferred taxes are recognized.

Giles (1998) and Kanellopoulos (2002) have found a negative relation between company size and tax evasion indicating that smaller companies tend to be less compliant than larger ones. In a similar vein, Persons (1995) found a significant negative relation between firm size and the occurrence of corporate fraud. Persons (1995), Spathis (2002) and Guan et al. (2008) examined the relation between the liquidity of the companies and fraudulent financial reporting but they did not find any significant results. However, these studies focused on cases of upward earnings management. It is expected that in the case of tax evasion the short-term economic position of the companies may affect managerial decisions regarding tax compliance.

Giles (1998) found that companies' effectiveness is negatively related to tax evasion. Persons (1995) and Guan et al. (2008) reached similar results by focusing on cases of fraudulent financial reporting whereas the studies of Fanning and Cogger (1998) and Spathis (2002) did not yield any significant results. Kanellopoulos (2002) has found a strong negative relation between companies' efficiency and the rate of tax evasion.

[2] Specifically, differences between the five years for all the 116 firms of the sample were examined by Kruskal–Wallis test and Wilcoxon Signed Rank test. The results suggest that there are no significant differences. Similar analysis was conducted by taking into account only the 14 companies for which there are available data for the whole period without missing values. The Friedman, Kendall's W and Wilcoxon Signed Rank Test revealed that the rate of tax evasion in year 2000 is significantly smaller compared to the years 2002, 2003 and 2004. Significant differences were not found for the tax gap. For the sake of brevity, the outcomes of the tests are not reported here but are available upon request.

On the other hand, Summers and Sweeney (1998) found that the companies that manipulate their accounting data earn a higher return on invested capital whereas Persons (1995), Spathis (2002) and Guan et al. (2008) did not provide corroborative evidence.

Table 2. Factors associated with fraudulent financial reporting. Literature review.

Study	*Variable*	*Impact*
Financial aspect: Company size		
Persons (1995)	Total assets	Negative (-)
Giles (1998)	Sales	Negative (-)
	Earnings	Negative (-)
Kanellopoulos (2002)	Total assets	Negative (-)
Financial aspect: Liquidity		
Persons (1995)	Working capital / Total assets	Not found
Spathis (2002)	Working capital / Total assets	Not found
Guan et al. (2008)	Current ratio	Not found
Financial aspect: Effectiveness		
Persons (1995)	Sales / Total assets	Negative (-)
Fanning and Cogger (1998)	Sales / Total assets	Not found
	Sales / Accounts receivable	Negative (-)
Giles (1998)	Sales / Total assets	Negative (-)
Spathis (2002)	Sales / Total assets	Not found
	Sales / Inventory	Negative (-)
Guan et al. (2008)	Sales / Invested capital	Negative (-)
Financial aspect: Efficiency		
Persons (1995)	Earnings / Total assets	Not found
Summers and Sweeney (1998)	Earnings / Total assets	Positive (+)
Kanellopoulos (2002)	Earnings / Total assets	Negative (-)
	Earnings / Sales	Negative (-)
Spathis (2002)	Earnings / Total assets	Not found
Guan et al. (2008)	Earnings / Total assets	Not found
	Earnings / Sales	Not found
Financial aspect: Asset structure		
Persons (1995)	Current assets / Total assets	Positive (+)
Fanning and Cogger (1998)	Fixed assets / Total assets	Negative (-)
Guan et al. (2008)	Fixed assets / Total assets	Not found
Financial aspect: Debt burden		
Persons (1995)	Liabilities / Total assets	Positive (+)
Fanning and Cogger (1998)	Liabilities / Equity	Positive (+)
Kanellopoulos (2002)	Equity / Total assets	Negative (-)
Spathis (2002)	Liabilities / Total assets	Positive (+)
Erickson et al. (2006)	Liabilities / Total assets	Positive (+)

The asset structure of a firm has also been analyzed, indicating that firms that issue fraudulent financial statements are more likely to show a higher percentage of current assets to total assets (Persons, 1995; Fanning and Coger, 1998; Guan et al., 2008). A plausible explanation is that companies find it easier to manipulate current assets accounts (such as inventory and accounts receivable) than fixed assets. The link between asset structure and tax evasion has not been examined. The companies that are struggling financially are considered to be more likely to commit accounting fraud in order benefit from the capital market. This notion is reinforced by the studies of Persons (1995), Fanning and Cogger (1998), Spathis (2002) and Erickson et al. (2006) which have found that the companies that issue falsified financial statements are in severe financial distress. It is also expected that companies with a high level of debt are prone to evade taxes in order to finance their obligations.

6. PREDICTION OF TAX EVASION RATE ON THE BASIS OF FINANCIAL STATEMENT DATA

6.1. Variable definition and model development

In order to investigate the relative significance of the different firm characteristics regarding the intensity of tax evasion a prediction model is developed. The dependent variable is the rate of tax evasion. Previous literature serves as the basis for the selection of the independent variables. The aim is to capture all aspects of corporate financial behaviour (liquidity, debt burden, effectiveness, efficiency, and size) that may affect managerial decisions regarding the extent of the underreporting of income. Since all the 116 companies in the sample are tax evaders, ordinary least squares regression analysis is applied. The model is formulated as follows:

$$\begin{aligned} Log(\text{Tax Evasion \%}) = a + b_1\, Log(\text{Acid}) + b_2\, Log(\text{Debt/Assets}) + b_3\, Log(\text{Current/Total.Liab.}) + \\ + b_4\, Log(\text{Asset.Turn.}) + b_5\, Log(\text{Profit.Margin}) + b_6\, Log(\text{Earnings}) + b_7\, Log(\text{Tax}) + \varepsilon \end{aligned} \quad (4)$$

The variables are defined below:

Log(Tax Evasion %) = The log (base 10) of the rate of tax evasion;

Log(Acid) = The log (base 10) of the acid-test ratio {(current assets – stocks)/current liabilities};

Log(Debt/Assets) = The log (base 10) of the ratio of total debt/total assets;

Log(Current/Total.Liab.) = The log (base 10) of the ratio of current liabilities/total liabilities;

Log(Asset.Turn.) = The log (base 10) of the asset turnover ratio (sales/total assets);
Log(Profit.Margin) = The log (base 10) of the net profit margin ratio (earnings before taxes/sales);
Log(Earnings) = The log (base 10) of the amount of earnings before taxes;
Log(Tax) = The log (base 10) of the tax burden, estimated as the amount of income tax paid divided by the accounting income.

Since the dependent variable is expressed as a ratio and the independent variables are expressed either as ratios or in euros log-linear analysis is applied in order to overcome problems of linearity (Siegel, 1997). The estimated coefficients represent the elasticity of the rate of tax evasion with respect to the independent variables.

6.2. Regression analysis results

The regression analysis results are presented in Table 3. The sample was reduced from 116 to 110 observations due to missing values. The application of Kolmogorov-Smirnov test showed that the assumption of normality is not violated. All variables appear to be statistically significant. The regression equation is expressed as follows:

$$\begin{aligned} Log(\text{Tax Evasion }\%) &= 1.488 + 0.469\, Log(\text{Acid}) + 0.415\, Log(\text{Debt/Assets}) + \\ &+ 0.496\, Log(\text{Current/Total.Liab.}) - 0.425\, Log(\text{Asset.Turn.}) - 0.485\, Log(\text{Profit.Margin}) - \\ &- 0.164\, Log(\text{Earnings}) - 0.413\, Log(\text{Tax}) \end{aligned} \quad (5)$$

As all variables have been expressed in logarithmic form, the coefficients show the elasticity between the rate of tax evasion and the independent variable. In order to be able to predict the actual rate of tax evasion on the basis of the initial (non-logarithmic) values the model is expressed as follows:

$$\begin{aligned} \text{Tax Evasion }\% &= 30{,}761 \text{ x } (\text{Acid})^{0{,}469} \text{ x } (\text{Debt/Assets})^{0{,}415} \text{ x } (\text{Current/Total.Liab.})^{0{,}496} \text{ x } (\text{Asset.Turn.})^{-0{,}425} \text{ x} \\ &\text{x } (\text{Profit.Margin})^{-0{,}485} \text{ x } (\text{Earnings})^{-0{,}164} \text{ x } (\text{Tax})^{-0{,}413} \end{aligned} \quad (6)$$

Table 3. Results of OLS regression analysis of the financial variables on the extent of tax evasion

Panel A: Dependent variable is the tax evasion rate				***Panel B: Dependent variable is the tax gap***			
Variable	**Coefficients**	**t-stat**	**Sig.**	**Variable**	**Coefficients**	**t-stat**	**Sig.**
Constant	1.488	1.688	0.094	Constant	-3.938	-3.486	0.001
Log(Acid)	0.469	2.621	0.010***	Log(Acid)	0.599	2.919	0.004***
Log(Debt/Assets)	0.415	2.089	0.039**	Log(Debt/Assets)	0.473	2.059	0.042**
Log(Current/Total.Liab.)	0.496	2.166	0.033**	Log(Current/Total.Liab.)	0.809	3.003	0.003***
Log(Asset.Turn.)	-0.425	-3.092	0.003***	Log(Asset.Turn.)	0.317	2.278	0.025**
Log(Profit.Margin)	-0.485	-4.792	0.000***	Log(Profit.Margin)	0.134	1.493	0.139
Log(Earnings)	-0.164	-2.533	0.013**	Log(Assets)	0.870	11.234	0.000***
Log(Tax)	-0.413	-4.508	0.000***	Audit. Firm	-0.153	-2.112	0.037**
Adjusted R^2	0.507			Adjusted R^2	0.546		
F	16.983			F	19.701		
F-significance	0.000			F-significance	0.000		
N	110			N	110		

Panel A: *Log* (Tax evasion rate) = a + b_1*Log* (Acid) + b_2*Log* (Debt/Assets) + b_3*Log* (Current/Total.Liab.) + b_4*Log* (Asset.Turn.) + b_5*Log* (Profit.Margin) + b_6*Log* (Earnings) + b_7*Log* (Tax) + ε. The dependent variable is the tax evasion rate. Acid = (current assets – stocks)/current liabilities; Debt/Assets = total debt / total assets; Current/Total.Liab. = current liabilities / total liabilities; Asset.Turn. = sales / total assets; Profit.Margin = earnings before taxes / sales; Earnings = earnings before taxes; Tax = the amount of income tax paid divided by the accounting income

Panel B: *Log* (Tax Gap) = a + b_1*Log* (Acid) + b_2*Log* (Debt/Assets) + b_3*Log* (Current/Total.Liab.) + b *Log*(Asset.Turn.) + b_5*Log* (Profit.Margin) + b_6*Log* (Assets) + b_7 (Audit.Firm) + e. Acid = (current assets – stocks)/current liabilities; Debt/Assets = total debt / total assets; Current/Total.Liab. = current liabilities / total liabilities; Asset.Turn. = sales / total assets; Profit.Margin = earnings before taxes / sales; Assets = the amount of total assets; Audit.Firm = a dichotomous variable that takes the value of 1 if the audit firm is SOL S.A. and 0 otherwise

* Significant at the 0.10 level
** Significant at the 0.05 level
*** Significant at the 0.01 level

The regression results show a positive and statistically significant relation between liquidity (measured by the acid-test ratio) and the rate of tax evasion. At first glance, this finding is contrary to the conjecture that firms with liquidity problems may resort to tax evasion in order to finance their activities. However, this finding may be attributed to the increase in cash resulting from tax evading activities. This assumption is reinforced by the Pearson correlation between cash and tax gap which is estimated at 0.459 (significant at the 1% level). To provide further evidence, the acid-test ratio is replaced with the liquidity index and the model is rerun. For the sake of brevity, the results are not reported here. The liquidity variable no longer appears to be significant whereas the coefficients of the other variables are not affected. It can be asserted that the liquidity of the firms that evade more taxes is higher due to the amount of cash they hold and not to other current assets. To sum up, the liquidity of a firm should not be considered to have a direct effect on the extent of tax evasion but to serve as a "red flag" in its prediction.

There is a positive and statistically significant relationship between the debt burden of a company (i.e. total debt to total assets ratio) and tax evasion. The coefficient of the ratio of current liabilities to total liabilities is also positive and statistically significant, indicating that the maturity of the debt affects tax evasion. The coefficient for the asset turnover ratio is negative and statistically significant at the 1% level. Similarly, the coefficient for the net profit margin ratio is negative and statistically significant at the 1% level, indicating that firms that can quickly generate earnings from their operations do not resort to tax evasion. The coefficient for earnings, which serves as a proxy for firm size, is negative and statistically significant at the 5% level. The results are consistent with prior studies (Giles, 1998; Kourdoumpalou and Karagiorgos 2012) indicating that the rate of tax evasion is lower in larger companies. The coefficient of TAX is negative and statistically significant at the 1% level. This reveals that companies with higher tax evasion rates pay less money in taxes and consequently have higher liquidity. Similar to the analysis performed earlier regarding the acid-test ratio, the variable of the tax burden should not be considered to have a direct effect on the extent of tax evasion but to serve as a "red flag" in its prediction.

6.3. Testing model assumptions

A number of tests have been applied to test model assumptions. Specifically, normality has been verified by means of the Kolmogorov-Smirnov criterion. The scatterplot of the studentized deleted residuals against standardized deleted values (not presented here) showed no evidence of heteroskedasticity. The scatterplot also showed that the linearity assumption can be accepted. Heteroskedasticity was also examined by applying the Breusch-Pagan test, which showed that the null hypothesis of homoscedasticity could not be rejected. Last, multicollinearity was tested by computing the tolerance factor. According to Norusis (2006) there is not a problem of multicollinearity when the tolerance factor is greater than 0.10 whereas Garson (2008) sets the lower limit at 0.20. The lowest value in the study is 0.372 for the variable total debt to total assets (the results are not presented here) so it can be inferred that a problem of multicollinearity does not exist.

6.4. Model validation

The validity of the prediction model developed is examined by applying it on a control sample obtained from the same population as the initial one. The whole sample consists of 116 public companies listed on ASE during 2000-2004 for which tax audit data were gathered for 305 firm-years in total. As the latest (most recent) audited year of each company formed the initial sample, the control sample consists of the previous year for which data is available. In this way, the control sample consists of 79 observations/companies, 37 of which refer to the accounting year 2003, 14 observations to 2002, 12 observations to 2001 and 16 observations to 2000. The mean actual rate of tax evasion is estimated at 16.84% while the mean predicted rate of tax evasion is estimated at 16.20%. The mean deviation of the predicted tax evasion rate from the actual one is 5.82%. The Spearman correlation coefficient between the actual and the predicted rate of tax evasion is estimated at 0.733 (significant at the 1% level).

7. PREDICTION OF TAX GAP ON THE BASIS OF FINANCIAL STATEMENT DATA

7.1. Variable definition and model development

In agreement with the methodology that was previously employed in order to build a prediction model for the rate of corporate tax evasion (section 6.1), we proceed to the examination of specific firm characteristics that relate to the extent of the tax gap. Seven variables are included in the regression model which examine the liquidity (acid-test ratio), the debt burden (total debt to total assets ratio and current liabilities to total liabilities ratio), the effectiveness (asset turnover ratio), the efficiency (net profit margin ratio), the size (total assets) and the audit firm. Again ordinary least squares regression analysis is applied, since all companies in the sample are tax evaders. Logarithmic transformation is also applied to all variables (except the audit firm). The log-transformation of the variables deals with problems of linearity, restores normality to skewed distributions and weakens scale effects (Siegel, 1997; Miralles and Veira; 2011). Willet (2015) also provides empirical evidence, mostly cross-sectional, that the distributions of the main accounting aggregates are all better approximated by a lognormal form when the data are positive. The following equation describes the regression model.

$$\begin{aligned} Log\,(\text{Tax Gap}) = {} & a + b_1\, Log\,(\text{Acid}) + b_2\, Log\,(\text{Debt/Assets}) + b_3\, Log\,(\text{Current/Total.Liab.}) + \\ & + b_4\, Log(\text{Asset.Turn.}) + b_5\, Log(\text{Profit.Margin}) + b_6\, Log(\text{Assets}) + b_7\,(\text{Audit.Firm}) + e \end{aligned} \tag{7}$$

The variables are defined below:

Log (Tax Gap) = The log (base 10) of the amount of tax gap;
Log (Acid) = The log (base 10) of the acid-test ratio {(current assets – stocks)/current liabilities};
Log (Debt/Assets) = The log (base 10) of the ratio of total debt / total assets;
Log (Current/Total.Liab.) = The log (base 10) of current liabilities / total liabilities;
Log (Asset.Turn.) = The log (base 10) of the asset turnover ratio (sales / total assets);
Log (Profit.Margin) = The log (base 10) of the net profit margin ratio (earnings before taxes / sales);
Log (Assets) = The log (base 10) of the amount of total assets;
Audit.Firm = a dichotomous variable that takes the value of 1 if the audit firm is SOL S.A. and 0 otherwise.

7.2. Regression results

The regression analysis results are presented in table 3. The sample was reduced from 116 to 110 observations due to missing values. The application of Kolmogorov-Smirnov test showed that the assumption of normality is not violated. All variables appear to be statistically significant. The regression equation is expressed as follows:

$$Log\,(\text{Tax Gap}) = -3.938 + 0.599\,Log\,(\text{Acid}) + 0.473\,Log\,(\text{Debt/Assets}) + 0.809\,Log(\text{Current/Total.Liab.}) + 0.317\,Log\,(\text{Asset.Turn.}) + 0.870\,Log(\text{Assets}) - 0.153\,(\text{Audit.Firm}) \quad (8)$$

As all variables (apart from audit firm) have been expressed in logarithmic form, the coefficients show the elasticity between the tax gap and the independent variable. In order to predict the actual rate of tax gap on the basis of the initial (non-logarithmic) values, the model is expressed as follows when a company is not audited by SOL S.A.:

$$\text{Tax Gap} = 0.000115 \times (\text{Acid})^{0.599} \times (\text{Debt/Assets})^{0.473} \times (\text{Current/Total.Liab.})^{0.809} \times (\text{Asset.Turn})^{0.317} \times (\text{Assets})^{0,870} \quad (9)$$

When a company is audited by SOL S.A., the model is expressed as follows:

$$\text{Tax Gap} = 0.000115 \times (\text{Acid})^{0.599} \times (\text{Debt/Assets})^{0.473} \times (\text{Current/Total.Liab.})^{0.809} \times (\text{Asset.Turn})^{0.317} \times (\text{Assets})^{0,870} \times 1.422^{-1} \quad (10)$$

The regression results show a positive and statistically significant relation between liquidity (measured by the acid-test ratio) and tax gap. A similar positive relation was previously found between liquidity and the rate of tax evasion and was attributed to the excess of cash a company holds by avoiding taxes. The present finding is interpreted in the same way. This means that liquidity should not be considered to have a direct effect on the extent of tax gap but to serve as a "red flag" in its prediction.

There is a positive and statistically significant relationship between the ratio of total debt to total assets and tax gap as well as between the ratio of current liabilities to total liabilities and tax gap. The results suggest that companies choose to evade taxes in order to finance their debt and especially their short-term liabilities. The coefficient of the asset turnover ratio turns out to be positive and statistically significant whereas it was previously found (see section 6.2) to have a negative effect on the tax evasion rate. The results indicate that the more effective/profitable companies evade more taxes (in absolute numbers) but these taxes represent a smaller fraction of their actual tax burden (i.e. taxes that would have been paid if the companies had not evaded any taxes).

The variable of total assets has the highest impact on the tax gap, verifying that the largest companies tend to evade more taxes even though they have the lowest tax evasion rates. This finding suggests that the tax authority should focus on the sectors with the highest tax gaps and not on the ones with the highest tax evasion rates in order to maximize public revenue. The same findings hold if, as a sensitivity test, the company size is captured by the variables of sales, earnings or market value of equity with the coefficients of the other variables not being affected.

Auditing services were provided in Greece for the first time in 1955, through a public body of chartered accountants named S.O.L. At that time and until 1992 an audit report could also be issued for tax purposes. However, with the opening up of the market in 1992, the services provided by the auditors were fully separated from the tax audit of the companies. With the liberation of the audit market, S.O.L. was abolished and many of its former members founded the company (société anonyme) of Certified Public Accountants Auditors (*S.O.L. S.A. – Synergazomenoi Orkotoi Logistes A.E.*) which had the largest market share as its accountants kept the costumers they had in the previous monopoly regime. S.O.L. S.A. is still the largest Greek auditing firm. The 57% of the companies in the sample has been audited by SOL S.A., 16% of the companies have been audited by a member of the Big-5 (or the Big-4, depending on the year), 24% have been audited by other Greek audit firms and the rest 8% have been audited by international companies (except for the Big-5). Consistent with previous studies (Kourdoumpalou and Karagiorgos, 2012), regression results show that the extent of tax evasion is significantly lower in the companies that have been audited by S.O.L. S.A. This finding has important implications regarding tax audits since, following Circular 1159/22.07.2011 of the Greek Ministry of Finance, the public companies are again obligated to have their tax returns attested by the statutory auditors.

The sole variable that did not turn out to be statistically significant is the net profit margin ratio. This finding can be explained considering that the amount of taxes that a firm can potentially evade depends mostly on its profitability rather than on its efficiency. To illustrate, two companies with earnings of €1.000 and €100.000 may evade up to "€1.000 x tax rate (%)" and "€100.000 x tax rate (%)" amount of taxes respectively, irrespective of their net profit margin ratio.

7.3. Testing model assumptions

A number of tests have been applied to test model assumptions. Specifically, normality has been verified by means of the Kolmogorov-Smirnov criterion. The scatterplot of the studentized deleted residuals against standardized deleted values (not presented here) was used to check for heteroskedasticity and linearity problems. Heteroskedasticity was also examined by applying the Breusch-Pagan test, which showed that the null hypothesis of homoscedasticity could not be rejected. Last, the tolerance factor was used to test for multicollinearity.

7.4. Model validation

The validity of the prediction model developed is examined by applying it on the control sample already determined in section 6.4. The actual tax gap of the control sample ranges from €14,245 to €3,449,000 with a coefficient of variation of 202%. The Spearman correlation coefficient between the actual and the predicted tax gap is estimated at 0.827 (significant at the 1% level).

8. CONCLUSIONS

The main aim of the present paper is to examine the tax behaviour of the Greek public companies when they operated in an accounting environment characterized by a high level of book-tax conformity (one-book system). In accordance with international practice, the extent of tax evasion is captured by using two different measures: the rate of tax evasion (i.e. the ratio of the reported to true tax liability) and the tax gap (i.e. the difference between the taxes owed and the taxes actually paid). By relying on tax audit data, tax evasion is found to be widespread among public firms in a highly aligned book-tax system, complementing the study of Watrin et al. (2014) who report that high conformity between the single financial statement and the tax statement is associated with more downward earnings management. Moreover, taking into account that public companies in Greece are obligated to be frequently audited by the IRS, the study provides evidence that strict IRS monitoring does not deter corporate tax evasion.

The relative significance of different firm characteristics regarding the intensity of tax evasion is examined by means of OLS analysis. Companies with higher rates of tax evasion turn out to have higher liquidity, more debt (especially short-term liabilities), are less effective and efficient in generating earnings and are smaller in size. Companies with higher amounts of tax gap are larger in size, have more liquidity, more debt (especially short-term liabilities) and are more effective. Furthermore, tax gap is found to be significantly lower in the companies audited by S.O.L. S.A., which is the largest Greek audit firm. The validity of the prediction models developed was tested by applying them on a control sample. Both the prediction of the rate of tax evasion and of the tax gap are considered satisfactory.

The outcomes of the present study may assist public bodies, such as tax authorities and regulatory bodies, as well as audit firms[3], in detecting and deterring tax evasion. After the adoption of IFRS in 2005, public companies in Greece publish their financial statements in accordance with IFRS whereas they apply Greek GAAP for tax purposes.

The prediction models developed in the present paper are hence applicable for the years after the adoption of IFRS. However, the accounting data of the public companies generated in accordance to the Greek GAAP is disclosed only to the tax authorities and the audit firms and are not publicly available.

Nowadays, an increasing number of countries have switched from a tax-based accounting system to a book-tax independent system with the transition to IFRS. Some researchers (Desai, 2005; Whitaker, 2005) assert that the separation of tax and accounting income triggers aggressive financial reporting as no tax costs are incurred, while others (Hanlon et al., 2008; Atwood et al., 2012) claim that the informativeness of earnings is enhanced. The present study contributes to the book-tax conformity debate by providing evidence that tax goals prevail over financial reporting in a one-book system. By focusing on Greece the paper responds to recent calls for more evidence from Europe (Watrin et al., 2014). However, taking into account the small size of the sample and the distinctive features of the Greek accounting setting, as for example the high ownership concentration in public companies (Tsalavoutas and Evans, 2010), any generalization of the results should be made with caution. Future research, examining tax and financial reporting behaviour of the Greek public companies after the adoption of IFRS will provide insight into the impact of IFRS adoption on managerial reporting incentives and accounting quality.

[3] Following Circular 1159/22.07.2011 of the Greek Ministry of Finance, public companies in Greece are obligated to have their tax returns attested by the statutory auditors.

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IMPACT OF INTERNAL OWNERSHIP ON THE MONITORING AND MITIGATING MECHANISMS OF EARNINGS MANAGEMENT PRACTICES

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Abstract

This paper attempts to review on how the effectiveness of board of directors and the executive compensations are moderated by internal ownership such as managerial and family ownership to mitigate earnings management. Most of prior studies focused on the traditional interaction among corporate governance mechanisms and earnings management, thus neglected that the variance of these practices that can be attributed to the business environment and the nature of ownership structure. This paper revisits the literature on the relationship between the factors of effectiveness of the board of directors in the individual level such as board independence, size, meeting frequency, CEO duality, audit and nominations-compensations committees, directors financial expertise, tenures and multiple directorship etc. and as a bundle through creating a score of effectiveness on the earnings management practices. It also reviews on whether the managerial and family ownership can moderate the relationship between the factors of effectiveness of the board of directors (as a score) and the total executive compensation with the earnings management practices. Panel data analysis method will applied over the data collected for ASE for the Jordanian listed firms for the period after the issuing of the Jordanian corporate codes in 2009. This paper's contributes to the existing literature by providing an in-depth review of corporate governance mechanisms and earning management.

Keywords: Earnings Management, Corporate Governance, Board of Directors, the Competency of the Members, Executive Compensations, Internal Ownership
JEL Classification: G32, G34, M12, M41
DOI: 10.22495/cocv14i2c2p2

1. INTRODUCTION

Under the accounting system, earnings are considered as one of the most important outcomes for this system (Graham et al., 2005; Lara et al., 2012). It is extensively used in the decision-making process via the decision makers comprising of users of the financial statements, whether internal or external. The reported earnings are the fulcrum for the company in order to formulate corporate policies that correlate to increasing capital, executive compensation and debt covenants (Muchoki, 2013).

Therefore, the level of earnings quality would be doubtful when managers have financial and economic incentives to manage earnings aggressively, which is described as an opportunistic behaviour if that is done in order to meet the managers' interests. This ability comes from the flexibility of accounting principles and treatments that in turn provide extensive powers of discretion to managers in reporting earnings, principally with regard to accrual. This judgment might be exploited to generate features in order to influence decision making for financial statements users (Ronen & Yaari, 2008; Beneish et al., 2013).

Aggressive earnings management is one of the biggest problem that is faced by modern economy recently as this kind of financial fraud has no techniques that can be used to determine the magnitudes for this practice. Be it aggressive or not, the idea of exploiting power itself is unacceptable. There is a common perception that the firms' managers used the opportunistic practice to maximize their own benefits instead of considering the benefits of the stockholders. Managers using the flexibility in the accounting standards and legislations in order to achieve their goals thereby create deformities in the earnings that have been reported (Jiraporn et al., 2008). Thus, many studies are adopted in the attempt to explain this practice and how to mitigate it via using the effective corporate governance mechanisms (Dibia & Onwuchekwa, 2014).

The significance of Anti-earnings management is believed to have many facets. So, it's considered as one of the aspects, which receives much attention in the agency theory. Prior studies have documented that earnings management can be avoided through applying laws and regulations properly such as the recommendation of corporate governance, which minimizes the agency conflict through limiting the opportunistic behaviors of managers (Ball & Shivakumar, 2005; Lin & Hwang, 2010). Moreover, the usefulness of corporate governance in the agency relationship eventually improves the usefulness of financial statements and also the value of the company through the ability of its characteristics to monitoring (Abed et al., 2012;

Ikechukwu, 2013). Also, its minimize the divergence gap by aligning the interest of contracting parties through appropriate executive compensations (Shiyyab et al., 2013).

However, the creditability and reliability of financial statement become questionable after the global economic fallout for listed companies in financial markets, including ASE firms (Hamdan, 2012). Therefore, it is necessary to find solutions to restore the confidence of financial reporting and enhance its quality. This will led to the direct attention of the organizations, regulators, professionals and academicians to recommend procedures and reforms through optimizing the corporate governance mechanisms in an ideal manner, focusing on the accounting principles. This will in turn help controlling the contractual content of the contract such as executive compensation, and also, increase the external and internal audit quality (Chau & Gray, 2010; Chen et al., 2011; Abed et al., 2012; Hassan & Ahmed, 2012; Abed et al., 2014). For example, Enron's scandal happened as Downes and Russ (2005) reported because there were weaknesses in its corporate governance, which of it formed a lack of independence of the audit committee in the main.

In addition, previous studies showed that corporate governance mechanisms is an effective tool for mitigating and monitoring the managerial opportunistic behavior (Klein, 2002; Xie et al., 2003; Niu, 2006; Shah et al., 2009; Ngamchom, 2015); such as opportunistic earnings management. Many researchers recommended that the pressure in order to comply with the underlying mechanisms of corporate governance would provide significant discouragement for the company to be engaged in the manipulated earnings. Therefore, it may be argued that corporate governance is one of the ways to prevent earnings management, but its mere presence of this conviction is unlikely to be implemented. This is so since it is unable to completely restrict these practices depending on other affecting factors such as business environment, culture, firm size, company ownership structure, the performance of the company and the level of entry into force of the companies act in the business environment (Chahine & Tohmé, 2009; Desender, 2009). Also, the process of examining the effectiveness level of the corporate governance mechanisms separately from each other can be used as an explanation for weakness of these practices where the effectiveness of one of the mechanisms may rely on another mechanism (Ward et al., 2009).

Basically, the effectiveness of a certain mechanism may rely on the effectiveness level of other mechanisms (Rediker & Seth, 1995). Thus, the impact of these mechanisms should be complementary to each other; which means that the effectiveness of any factors or corporate governance as a whole may be carried out through dissimilar channels (Cai et al., 2015). According to Davis and Useem (2002) corporate governance mechanisms react in a reciprocal manner with each other for the formation of comprehensive effectiveness.

However, corporate governance plays an important role in mitigating opportunistic behaviours of managers, but until now there is no inclusive evidence. Despite the multiplicity of studies, the debate is still without stopping in the midst of the varying results, which in turn suggests that there is no conclusive substantiation on the role of corporate governance (Gulzar & Wang, 2011; Mohamad et al., 2012). Furthermore, previous evidence showed that the quality of accounting information is not only affected by the inaccurate implementation of the accounting standards but also through a weakness of implementing the governing protection role for investors and the poorness in the governance system (Ball & Shivakumar, 2005). Thus, studying whether corporate governance mechanisms work to decrease the supply of earnings management practices in an emerging market, such as Jordan in an effective manner is potentially significant and interesting to regulators, investors, and academicians.

2. CORPORATE GOVERNANCE AND EARNINGS MANAGEMENT

Healy and Wahlen (1999, p. 368) mentioned that "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers". However, Earnings management is considered as a concern and one of the most critical ethical situations, which accountants and others confront in everyday practices throughout the world (Ronen & Yaari, 2008). In all events, earnings management as a concept is difficult to define and measure. Apparently that there is no generally accepted definition since there is no consensus among researchers to determining a single and accurate definition of earnings management (Beneish, 2001). However, earnings management as a practice is attributed to the methods by which financial information is manipulated to provide a good impression of the firm's performance and financial position. This may involve using many accounting treatments that are considered as conservative or aggressive for its role in misleading the users of financial statements, where these treatments are not accommodated under the Generally Accepted Accounting Principles "GAAP" (Xiong, 2006; Goel, 2012).

Consequently, several corporate governance mechanisms can be used in order to monitor and mitigate the managerial opportunistic behaviours; therefore, minimizing the level of earnings management (Jensen & Meckling, 1976; Vafeas, 2005). For instance, the board of directors is one of the most important elements of the internal corporate governance mechanism. Consistent with Zahra and Pearce (1989); Xie et al. (2003); Benkel et al. (2006); Niu (2006); García Lara et al. (2007); Akhtaruddin and Haron (2010); Abed et al. (2012); Hassan and Ahmed (2012) the essential institution of the internal corporate governance in the company is the board of directors, which provides the business monitoring key that deals with agency problems. The agency theory expects that boards will enhance the honesty of the financial reporting through scrutinized management since corporate boards are accountable for scrutinizing management actions. Particularly those related to performance, financial disclosure, and responsibilities delegated to sub-committees (Vafeas, 2000). Fama and Jensen (1983) stated that the board of directors will be able to reduce agency conflicts through using its power to scrutinize and control management based on the awareness that the managers may have personal preferences and these preferences may not always be in consistent with shareholders' expectations. Thus, the board of directors must be control them (Limpaphayom & Connelly, 2006; Nahandi et al., 2011).

Overall, the ability of the board of directors and its effectiveness in monitoring the managers can be improved through the enhancement of the board independence, board size, board frequency meeting, CEO non-duality, board committees and the competency of the board members that can be achieved through financial expertise, tenure, multiple directorships (Kiel & Nicholson, 2003; García Lara et al., 2007; Goh, 2009; Akhtaruddin & Haron, 2010; Hassan & Ahmed, 2012; Chen & Zhang, 2014; Ngamchom, 2015). Therefore, corporate governance structure depends on combining different characteristics to work effectively. This in turn will minimize the agency cost. Thus, it's better to handle with corporate governance mechanisms as a bundle (Rediker & Seth, 1995; Grosman & Wright, 2015). Especially there is a fluctuation in the evidence of prior studies for the monitoring role carried out by these factors, which contravene or consistent with the Agency Theory, for instance (Chtourou et al., 2001; Abdul Rahman & Ali, 2006; Sarkar et al., 2008; Gulzar & Wang, 2011; Kouki et al., 2011; Abed et al., 2012; Nugroho & Eko, 2012; Dibia & Onwuchekwa, 2014; Uwuigbe et al., 2014; Ngamchom, 2015).

Comparatively, Firms in ASE are still in infancy of the activation of corporate governance (Al-khabash & Al-Thuneibat, 2009; Al-Najjar, 2010; Bawaneh, 2011; Abed et al., 2012). In addition, the poorness in the controlling system is considered as the outcome of the weakness of corporate governance structures and the lack of clarity of the corporate schemes, objectives, and strategies. So, it will maximize the risks that may be faced by the investors and shareholders in the Jordanian market (Abdullatif & Al-Khadash, 2010).

Moreover, it should be mentioned that the company's institutional structure has a significant impact on the effectiveness of the board of directors as another expected reason for variance of evidence (Desender, 2009; Desender et al., 2013). In other words, power and responsibilities of the board and most of the factors that constitute its level of effectiveness depend on the company's institutional structure. The board of directors often follow the controlling shareholders (Young et al., 2008). Therefore, the ability of the board to monitoring managerial behaviours depend on the ownership structure of the firm because there is some type of interaction between them can explain the disparity of monitoring and effectiveness patterns (Desender et al., 2013). The board members may be chosen and appointed as legal fiction (Kosnik, 1987). Also, in corporate governance context, if the findings of prior studies are not consistent, Hill (1999) pointed out that the role of managerial ownership and family ownership should be taken into consideration to be examined.

In the Jordanian listed companies, family's ownership is concentrated in the financial and industrial sectors or the largest shareholder is the chairman (Al-Najjar, 2010). Families owned around 51% of the firms share outstanding in ASE (Jaafar & El Shawa, 2009). Thus, under these controlling ownerships, the board of directors may be affected by this control depending on the attitudes of the controllers. Grosman and Wright (2015) suggest that the effectiveness of the board of directors must be considered in the light of probabilities related to the nature of the firm's ownership structure. While, Whidbee (1997) pointed out that the composition of the board of directors reflects the nature of the firm's ownership structure. Therefore, the voting rights could be exploited by internal controllers when they have a significant equity stake in the companies, in order to appoint and dismiss the directors as they wish. Controlling shareholders trying to invest with lower equity and obtain most of the company interests through a cross-shareholding method and pyramid structure. Thus, creating divergence gap between controlling rights and cash-flow rights (Wu et al., 2016). In fact, managers did not suffer from job concerns when they have a significant proportion of equity thus the board of directors becomes susceptible to be compromised in firms under family or single insider control (Chen & Jaggi, 2001). The necessity of board monitoring becomes lower as a consequence of the ability of the shareholders to involved in managerial operations. Since, they can acquire the information that they need. Whilst it's, become very important for minority shareholders in this case because the majority shareholders and managers are the same persons which in turn increase the probability of exploiting their interests.

The agency conflict is more likely to be arising between inside and outside shareholders in firms with the insider control without holding substantial equity, while the outside shareholders are also dispersed to use their control rights (Berle & Means, 1932) cited in (Ayyagari et al., 2011, p. 2) . Therefore, the nature of agency conflict can shift from traditional agency problem to central agency problem as a result of the controller shareholders engagement in management thus the majority expropriation the minority (Manzaneque et al., 2016). In developing countries the central agency problem could be more severe as a result of spread the business group of family or single insider control (Shleifer & Vishny, 1997; Ayyagari et al., 2011).

In firms that dominated by insiders either managerial or family, the effectiveness level of board of directors could be feeble and their monitoring role in managerial behaviour may be weaker (Chen & Jaggi, 2001; Mak & Li, 2001; Jaggi & Leung, 2007; Jaggi et al., 2009). For instance, external directors could be elected as who appear to be an independent but are in reality not independent in real meaning when the controlling shareholders dominate the inside operations and the board of the company in order to maintain their influence (Wu et al., 2016).

Jaggi et al. (2009) using a sample of 770 firm-year listed on the Hong Kong for the period between 1988-2000. Documented that the effectiveness of corporate boards in performing their monitoring role has been moderated in firms that are controlled by families. In family-controlled firms the effectiveness of independent corporate boards in monitoring earnings management becomes lower. This means that the attempt to enhance the strength of the board's monitoring role through increasing the proportion of outside directors is unlikely to be efficient in family-owned firms. Li and Hung (2013) have shown that the managerial overconfidence in firms that are controlled by families becomes lower, which means that the positive relationship that arise between the managerial overconfidence and earnings management practices have been negatively moderated effects from the families' control. Moreover, Chen and Jaggi (2001) provided evidence that the effectiveness of the board of directors (Or as they referred to as the responsiveness) in firms with family ownership can possibly become weakened. Thus the weakness of the monitoring role can attributed to the presence family member in the board (Jaggi & Leung, 2007).

Furthermore, Shiyyab et al. (2013) mentioned that the executive compensations is one of the best means to ensure the reliability of accounting information as one of the corporate governance mechanisms. Actually, executive compensations from the perspective of the agency theory ensures the harmonization between the interests of executive managers and those of the shareholders. Executive compensation received little attention in the developing countries' prior studies where most of the studies have been conducted in the U.S and U.K and other developed countries, which are characterized by presenting relatively similar institutional contexts (Gaver et al., 1995; Shrieves & Gao, 2002; Baker et al., 2003; Cheng & Warfield, 2005; Sun & Hovey, 2013; Hassen, 2014). In developing countries, markets commonly have dissimilar institutional settings, particular attention to corporate governance rehabilitation, ownership structures and executive compensation incentives. The relationship between executive pay and earnings management practices can prospectively be different from what has been noted in developed countries. Especially since Abed et al. (2014) found in their investigation that the results of CEO executive compensation in Jordanian firms are consistent with the various guidelines for the developing corporate governance codes that were issued recently in 2009.

On the other hand, it can be assumed that the internal control may affect the executive compensation level, where controlling shareholders have together the ability and the motivation to reduce costs of agency contracts (Jiang et al., 2009). In fact, for managers a low level of compensation could be accepted if enjoy a high level of job stability this arise when family and managerial control existed in the company (Amoako-Adu et al., 2011). However, the opposite may happen as a result of the attempt of the controlling shareholders to expropriate the minority interest through compensations (Croci et al., 2012). Often the dominant family attempts to use its power to overpay their members as an executive (Basu et al., 2007). Managers with holding a small percentage of share of capital attempts to increase the percentage of compensations in order to align their interest with the outside owners interest but when the central agency problem existed the loopholes could be exploited to transfer the minority interests to their own (Hassen et al., 2015). Basically, majority ownership with control could be an incentive to shareholders to manage the business according to their benefits where they will be able to access the information or prevent some of the information from reaching external ownership.

Tsao et al. (2015) documented that the family ownership structure has been treated as a moderator variable on the sensitivity of executive compensation in research and development investment. It is known that the firms can reduce the opportunistic managerial behavior regarding the exploitation of research and development investment through the sensitivity of executive compensation towards it. Thus, they documented that the sensitivity of executive compensation in the firms with family ownership is higher than firms without family ownership.

However, the central agency problem is more likely to exist especially that the Jordanian listed firms used upwardly earnings management (Al-Fayoumi et al., 2010). A gap of vulnerability arise as a result of this problem, thus, the majority of shareholders can exploit this gap to migrate the benefits of minority shareholders to their own benefit (Wang, 2006). Therefore, this study introduces the insider's ownership, namely managerial and family ownership as a moderator variable in the attempt to substantiate whether this perspective is accepted or not. The internal ownership structures have an effect on both relationships between the board of directors' effectiveness in monitoring the opportunistic behaviour on one hand, and the executive compensation on the other hand, with the earnings management.

In Jordan, a few studies were conducted to associate corporate governance with earnings management practices. This did not exceed about two studies, to the best of our knowledge, although there is evidence of earnings management practices in the developing countries and existence of the corporate governance practice in the developing markets (e.g. Abed et al., 2012; Al-Fayoumi et al., 2010). Therefore, this study provides an optimal arrangement of corporate governance and its mechanisms' roles in monitoring and reducing the earnings management based on the costs, benefits and explanation of these factors in accordance with developing countries like Jordan.

3. CONCLUSION

Even with the multiplicity of studies, to some extent, the researchers noted different evidence and results concerning the roles of corporate governance mechanisms and other factors in minimizing the earnings management practices. This is so as they reflect various experiences and expertise whether in the industrial or developing markets where there are vivid differentials in political, cultural, social and economic situations between countries. Therefore, the existence of the few studies that are likened to experimental investigations or surveys that have been implemented in the Jordanian environment may be referring to the inability and limitations of the studies that were applied. So, this study aim to provide more understanding for the applying corporate governance in the developing countries, especially Arab region such as Jordan. In addition, most of previous studies of corporate governance often ignore the linkages between various mechanisms and disregard the complementary or substitutive effect of each other on firm outcomes. Thus, this study is subjected to exploring the accumulative impact of the board of directors' characteristics through create a score to determine the effectiveness of board complying with Jordanian corporate code. Furthermore, it will be examining the association for each of the board's characteristics individually with the earnings management practices in order to verify the level of following the regulations and instructions for corporate governance in the listed companies especially after the adoption of the Jordanian corporate codes in January, 2009.

Also, most of the prior studies don't take into consideration the specific institutional context of each company which could be another reason for the fluctuation in the effectiveness level of various corporate governance practices. As well as, prior studies incapable of explaining the relationship among variables through the explanation of correlations via the agency conflict between the majority and minority shareholders, and the agency problem between agents and principals at the same time. Consequently, shedding new light to reconsider the interpretation of variations in the previous studies that could attributable to the formation of the ownership structure through investigating the internal patterns of ownership structure as moderator variables that can influence the relationship between the board's effectiveness and the earnings management.

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PERCEPTION OF COLLECTIVE BARGAINING AND SATISFACTION WITH COLLECTIVE BARGAINING ON EMPLOYEES' JOB PERFORMANCE

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Abstract

This study explores the influence of collective bargaining and satisfaction with bargaining on employees' job performance. A structured questionnaire was distributed to selected sample of 181 unionized employees in the public sector organizations. The results revealed two models, with the first model indicating that satisfaction with collective bargaining ($\beta = .56$, $p < 0.01$) was a significant direct predictor of job performance among employees. The second model showed 35% incremental change in employees' job performance. This indicated that age ($\beta = .27$, $p < .01$), and educational qualification ($\beta = .58$, $p < .01$) were significant independent predictors of employees job performance. This study showed that collective bargaining process is very critical in determining organizational industrial relations which in turn help to improve job related outcome such as employees' job performance.

Keywords: Collective Bargaining, Satisfaction, Job Performance, Union
JEL Classification: J52
DOI: 10.22495/cocv14i2c2p3

1. INTRODUCTION

Collective bargaining is quite common within the public sector (Moe, 2006; Moe, 2009), because the power of the unions, and the interest of the union to pursue negotiations, are rooted in survival strategies (Moe, 2009). Collective bargaining therefore, is a process of mutual influence between the employer and the union (representing employees) with an objective of reaching mutual agreement on employees' working conditions (Cloutier *et al,* 2012). According to Godfrey et al (2007), collective bargaining is central to any industrial relations system, as a tool through which regulated flexibility is achieved as the involved parties (the employer, and the union) operate on divergent interests and different conclusion as a result of available resource or perceived available resource, and competitive position. In addition, relations between unions and employers are often portrayed as a 'zero-sum game', where union members benefit at the expense of employers, and vice versa (Bryson, 2001). In their studies Bacharach and Lawler (1981) and Katz et al (2008) stated that employees are the productive power of the organization while the employer provides wages and benefits.

There is growing evidence that both workers and employers can benefit under the conditions of fair collective bargaining system (Bryson and Wilkinson, 2002). Likewise, Chaulk and Brown (2008) study showed that collective bargaining could be a significant event which might leave deep scars in the workplace, such as reducing job satisfaction, and organizational commitment beyond the end of collective bargaining process. While, it could also provide positive influence on productivity due to workers' higher motivation and satisfaction (Addison *et al.,* 2004). On the other hand, Cahuc and Zylberberg (2004) opined that the total effect of collective bargaining is an open empirical question. However, unions may significantly increase worker motivation, thereby improving productivity and performance through giving 'voice' to workers concerns and grievances and represent their concerns and grievances to management (Bryson and Wilkinson, 2002).

2. LITERATURE REVIEW

The framework governing collective bargaining according to Cloutier et al (2012: 401) is based on a National Labour Relations Act (NLRA) in case of United States, which give employees the right to be represented by a union, thus, making employees' working conditions to be determined through collective bargaining process. The Act (NLRA) gives either party to use economic weapons, such as strikes and lockouts, to impel the opposing party to make concessions and reach an agreement. As collective bargaining, is a process through which employees (union) are encouraged to participate actively in activities that put pressure on the employer for better condition of service, such participation is often viewed as crucial for determining outcomes. Employee and employers participation in bargaining therefore involve a cost to be paid after evaluating the extent to which actions are useful and profitable (cost-benefit ratio).

This can be explained through expectancy theory (Vroom, 1964) which is based on a rational calculation of costs and benefits of actions. According to Cloutier et al (2012), the expectancy theory predicts that employees motivation are based on obtaining the desired outcomes (benefits) when the probability that their action will lead to the desired benefits is high (instrumentality); and that the costs of actions are lower than the desired benefits (costs-benefits ratio). In terms of collective bargaining, employees response are based on how the employer improve their offer to the expected level (instrumentality), and if the costs are higher than the benefits they seek (cost/benefit ratio). This study assumed that if employees are satisfied with collective bargaining, the employees will be in position to do more in terms of job performance. Just as, Martin and Sinclair (2001) study showed that employees' decisions not to engage in a strike could be explained largely by their belief that the costs associated with the strike could be too high considering the concessions expected from the employer (expected benefits).

A number of studies had shown that where employees had their terms and conditions of employment determined through collective bargaining, and where management supported unions, there was an improved industrial relations environment (Beardwell *et al.,* 2004). Possibly because union members and other workers covered by collective agreements, on average, get higher wages than their non-unionized (or uncovered) counterparts. Although, according to Aidt and Tzannatos (2002), it is not known whether employees performance improve with positive outcome of collective bargaining agreements.

Nevertheless, collective bargaining had been noted to help promote cooperation and mutual understanding between workers and management by providing a framework for dealing with industrial relations issues without resort to strike and lockouts. According to Gomez-Mejia et al (2003), fair and legal process would often result in successful collective bargaining, maintenance of industrial discipline and peace. In the same vein, Adewole and Adebola (2010) asserted that frequent outbreak of industrial conflicts between employers and employees could be effectively managed through collective negotiation and consultation with the workers' representatives.

Though, there have been few studies that focus on the application of collective bargaining (Morrow and McElroy, 2006; Nurse and Devonish, 2007), Jensen and Rässler (2007) study indicated that effects of collective bargaining on wages and firm performance have received a great deal of interest. While Traxler and Brandl (2011) study showed that collective bargaining institutions had no impact on employment performance in the OECD countries. These empirical evidences showed mixed results that are inconclusive. Literature also decried limited scholarly contribution on industrial relations from developing nations especially the African continent (Budhwar, 2003; Pyman *et al.,* 2010; Wood and Dibben, 2006; Wood, 2008). In addition, few empirical study have been conducted on the influence of satisfaction with collective bargaining, while collective bargaining activity on 'performance in organization has not received adequate research attention. To fill this information gap and stimulate more research on labour relations from African continent, this study was designed to investigate the influence of perception of collective bargaining and satisfaction with collective bargaining on employees' job performance. It assumed that perceptions formed during the collective bargaining process would likely be spread to employees' attitudes and behaviours in the workplace as collective bargaining process have a way of influencing the quality of industrial relations. This study therefore hypothesized as follows:

1. That collective bargaining activities and satisfaction collective bargaining would be positively related to job performance.
2. That there would be significant difference between employees who engages and supports collective bargaining activities on job performance and those that who do not.
3. That there would be significant difference between employees who are satisfied with collective bargaining agreements process on job performance and those who do not.
4. That psycho-social variables would incrementally increase the prediction of job performance compared to collective bargaining variables.

3. METHODOLOGY

3.1. Research Design

The study was an ex post-facto which utilized the cross sectional survey with the data collection done at a single point of time. Ex post facto is used to refer to a study in which the researcher, rather than creating the treatment, examined the effect of a naturally occurring treatment after it had occurred (Landman, 1988: 62). In other words it attempts to discover the pre-existing causal conditions between groups. The main independent variables considered in this study were perception of the collective bargaining (incidence and satisfaction). The demographic independent variables were sex, age and education while the dependent variable is job performance.

3.2. Participants

Evidence from research showed that membership of union was much higher in public sector (Bender & Sloane, 1998). A total of 181 participants were therefore sampled from the selected employees public research institutes in Ibadan, Nigeria. Fifty-three per cent were males and the mean age of all participants was 36.3 years (s = 8.4 years). Marital Status showed that 47% were Singles, 46.4% Married, and 6.6% Divorced. Educational qualification ranged from High School Certificate 17.7%; Diploma 14.9%; Bachelor degree 52.5%; and Postgraduate degree 14.9%. Highest work experience was 26 years ($\bar{x}$ = 10.6 year, s = 5.2).

3.3. Instrument of Study

Self-administered structured questionnaires which consisted of four sections were used for the survey study. Section A comprised the demography of the respondent, that is, gender, age, educational level, occupation, and years of experience.

Section B measures collective bargaining behaviour among respondents using a 7 item scale developed by Dastmalchian et al (1991) with a reliability coefficient of 0.97. Respondent expressed their degree of agreement or disagreement on a 5-point Likert-type scale ranging from very strongly disagree (score 1) to very strongly agree (score 5). The higher the score on the scale, the higher the level of collective bargaining behaviour, while scores below the mean score indicated lower collective bargaining agreement. The Cronbach alpha in this study was 0.82.

Section C measures satisfaction with collective bargaining agreement among respondents using 4-item scale adapted from researchers (Bryson and Wilkinson, 2002; Dastmalchian *et al.,* 1991; Deery *et al.,* 1994). The respondent expressed their degree of agreement or disagreement on a 5-point Likert-type scale ranging from very strongly disagree (score 1) to very strongly agree (score 5), the higher the score, the higher the levels of satisfaction with collective bargaining agreement. The Cronbach alpha in this study was 0.71.

Section D: Measures job performance of employees using a 7-item scale developed by Williams and Anderson (1991). High score in this measure indicated high job performance of employees, while low scores indicate low job performance. The respondents expressed their degree of agreement on a 5-point Likert-type scale ranging from very strongly disagree (score-1) to very strongly agree (score-5). The reliability co-efficient for the scale from study was 0.82 while the alpha for this study was 0.84. All scale items score are combined into a single total score through, computing the average score.

3.4. Procedures

Primary sources of data were utilized for this research. Primary source of data involved questionnaire administration. In this research, questionnaires were administered to employees within a period of two months duration so as receive maximum response rate. The research sought for the necessary approval from the management of the Research Institutes. After permission was granted. The researcher visited offices and Departments within the institutes to distribute the questionnaires. A purposive sampling method was used to select the 230 respondents for the questionnaires administration. Hence, the sample consisted of randomly selected operational level employees. After rejecting the incomplete questionnaires, 181 valid questionnaires were used for data analysis purpose. Hence the response rate was 78.69 percent.

3.5. Data Analysis

The collected data was analysed statistically using the latest IBM-SPSS software. The study utilized both descriptive and inferential statistical tools of analysis. The statistical tests used include multiple regression analysis for testing composite relationship of the independent variables, Pearson correlation analysis to test the strength of the relationship between the independent and dependent variables and 2 x 2 ANOVA for testing significant difference between the independent groups.

4. RESULTS

The first hypothesis, which stated that collective bargaining activities and satisfaction collective bargaining would be positively related to job performance, was tested using Pearson Product Moment Correlation.

Table 1. Pearson Product Moment Correlation of sense of competence, collective bargaining process and satisfaction bargaining process

Variables	$\bar{x}$	*S*	*1*	*2*
1. Job Performance	34.44	8.86	-	
2. Collective bargaining process	36.38	6.57	.37**	-
3. Satisfaction bargaining process	16.16	2.94	.45**	.89**

** p < .05; ** p < .01*

The result in Table 1 showed that there was significant positive relationship between perception of collective bargaining process and job performance ($r = .37$, $p < 0.01$), satisfaction bargaining process and job performance ($r = .45$, $p < 0.01$), and also a positive significant relationship between perception of collective bargaining process and satisfaction bargaining process. Job performance increased with increasing level of employees' collective bargaining process and collective bargaining satisfaction, thus indicating that acceptance of the hypothesis.

Hypotheses 2, 3 and 4 were test with analysis of variance. The result as presented in Table 2 showed that the main effect of collective bargaining on employees job performance was not significant $F(1,177) = 1.38$, $p > .05$. Differences in job performance were not observed in job performance based on low or high scores on collective bargaining. The finding also indicated the significant main effect of satisfaction with collective bargaining on job performance $F(1,177) = 38.24$, $p < .01$. Employees with higher averaged scores on collective bargaining satisfaction significantly reported higher scores on job performance compared to those with low scores on collective bargaining satisfaction. There was significant interaction effect of collective bargaining and collective bargaining satisfaction on job performance among employees $F(1,177) = 34.90$, $p < .01$.

Table 2. 2 x 2 ANOVA analysis of collective bargaining satisfaction and collective bargaining on job performance among employees

Source	*SS*	*df*	*MS*	*F*	*Sig.*
Collective bargain	69.71	1	69.71	1.38	> .05
Collect Bargain Satis.	1934.52	1	1934.52	38.24	< .01
Collective bargain * Collect Bargain Satis.	1765.44	1	1765.44	34.90	< .01
Error	8953.31	177	50.58		
Corrected Total	14581.41	180			

Note: Collective Bargain Satis = Satisfaction with collective bargaining process

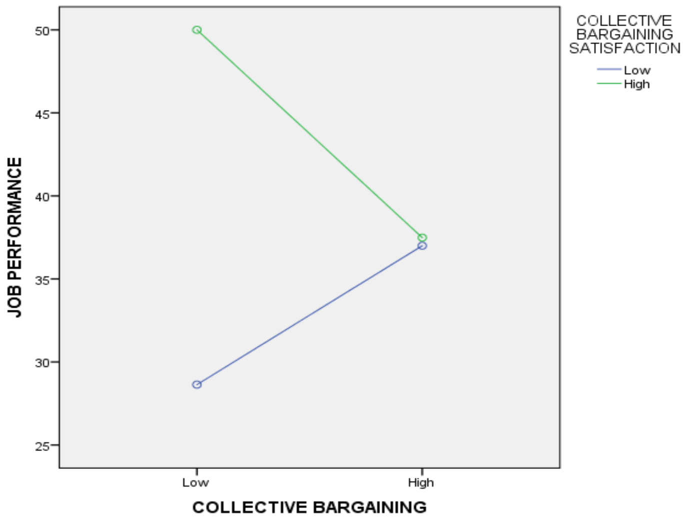
Table 3. Mean differences in job performance based on collective bargaining and collective bargaining satisfaction

Level of interaction	*N*	$\bar{x}$	*S*	*LSD Post hoc Analysis*			
				1	2	3	4
Low CB vs. Low SCB	77	28.64	8.73	-	21.36*	8.36*	8.85*
Low CB vs. High SCB	9	50.00	3.10		-	13.00*	12.51*
High CB vs. Low SCB	9	37.00	4.20			-	.48
High CB vs. High SCB	86	37.49	6.10				-
Total	181	34.32	9.00				

** LSD value significant $p < 0.05$*

Following the result of significant interaction effect obtained, a multiple comparison analysis was carried out. The post hoc analysis presented in table 3 revealed that workers low on collective bargaining but high on collective bargaining satisfaction reported higher job performance level compared to workers high on both collective bargaining and collective bargaining satisfaction; those low on both collective bargaining and satisfaction, and workers low on collective bargaining and collective bargaining satisfaction. There were also significant differences between workers high on collective bargaining but low on collective bargaining satisfaction, workers high on collective bargaining and collective bargaining satisfaction, and workers low on collective bargaining and collective bargaining satisfaction.

Figure 1. Interaction effect of collective bargaining and collective bargaining satisfaction on job performance



Hypothesis 5, which stated that psycho-social variables would incrementally increase the prediction of job performance compared to collective bargaining variables was tested using hierarchical multiple regression analysis and the result presented in Table 4.

Table 4. Hierarchical regression with job performance as the outcome variable

	Model 1				*Model 2*			
	B	**S.E**	**Β**	**t**	**B**	**S.E**	**β**	**T**
(Constant)	12.97	3.45		3.74	-3.53	3.21		-1.10
Collective bargaining	-.17	.20	-.13	-.84	.16	.16	.15	1.01
Collective Barg Satis	1.71	.45	.56	3.78**	.55	.37	.18	1.50
Sex					.10	.97	.01	.11
Age					.29	.07	.27	4.07**
Highest academic					4.86	.44	.58	11.05**
	$R = .45, R^2 = .20, F(2,178) = 22.63$				$R = .74, R^2 = .55, F(5,175) = 42.92$			

*Note: Dependent variable = Job Performance; * = $p < 0.05$, ** = $p < 0.01$*

The first model which tested the predictive power of collective bargaining activities and satisfaction explained 2% of the variance in job performance of employees $R^2 = 0.20$, $F(2,178) = 22.63$, $p < .001$. The result demonstrated that collective bargaining satisfaction was significant direct predictor of job performance among employees ($\beta = .56$, $p < .01$), while collective bargaining perception was not significant. The second model saw the introduction of socio-demographic variables improved the prediction of job performance ($R^2 = 0.35$, $\Delta R^2 = .55$, $F = (5, 175) = 42.92$, $p < .001$). There was an incremental 35% change in employees' job performance. This indicated a higher variance compared to the variance accounted for by collective bargaining behaviours. The result revealed that in the second model, age ($\beta = .27$, $p < .01$), and educational qualification ($\beta = .58$, $p < .01$) were significant independent predictors of employees job performance.

5. DISCUSSION

The study examined the influence of the collective bargaining (incidence and satisfaction) on job performance among employees. The tested hypotheses were supported. First, the study found significant positive relationship between perception of collective bargaining behaviour and job performance and satisfaction with outcome of collective bargaining activities and job performance. In other words, giving employees formal right to negotiate collectively over some aspects of work, offers opportunity to influence workplace outcomes such as job performance. This supported the work of Deery et al (1995) and Deery et al (1999) which demonstrated that collective bargaining not only increased the commitment of employees but their efforts also. However, this findings contradicted Traxler and Brandl (2011) study which found that collective bargaining had no impact on employment performance.

Furthermore, the findings from this study could be interpreted as indicating that collective bargaining was an indirect strategy in employees' job motivation. This is because with a good collective bargaining outcome yielding better welfare for employees. This type of behavior may invariably motivate employees to work towards better job performance. While a poor collective bargaiing outcome may lead to a state of chaos i.e. sit-down strikes and increased rate of absenteeism. These findings also gave credence to study of Addison, et al. (2004) that collective bargaining process could also provide positive influence on productivity due to workers' higher motivation and satisfaction. In addition to Bryson and Wilkinson's (2002) study, which suggested that giving 'voice' to workers' concerns and grievances could be a significant factor in increasing worker motivation, thereby improving productivity and performance.

Lastly, the findings also showed that satisfaction with collective bargaining, age and educational qualification were significant predictors of employees' job performance. The result of educational qualification confirmed the study of Pennings, Lee and van Witteloostuijn (1998) that highly educated employees and age are likely to contribute to activities that increase job-relevant knowledge which strengthen job performance.

6. CONCLUSION AND RECOMMENDATIONS

The findings from this study provided better understanding of the process underlying the impact of collective bargaining on organizational behavioural outcome and also demonstrated the complexities of bringing about change in the research institutions environment. The result proved that collective bargaining and satisfaction with collective bargaining outcome influence employees' job performance. In sum, this study reiterates our understanding that collective bargaining process, is very critical in determining organizational industrial relations as engaging employees in collective agreement tend to help improve job related attitude and employees' job performance.

More studies are still required to look at different categories of employees especially, how unionization, non-unionization and collective bargaining probably influence job performance which the magnitude is difficult to judge given the existing knowledge. Furthermore, changes in the occupational composition of the public workforce need to be assessed. This type of research might shed light on the role unions have played as hours of work, fringe benefits, and work rules may take on greater importance among public employee unions due to the sophistication and better education of members. This is expected to help avoid pitfalls of organizations with poor industrial relations. The research therefore contributes to advancement of knowledge on industrial relations from the African context.

7. LIMITATION

The generalizability of our findings may be limited because the study was conducted among research institutes. This population of employees may be quite different from employees in general, in particular with respect to average education levels. Further studies should involve variety of jobs and settings – public and private.

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A MIXED METHODOLOGY TO VIEW INTERNAL AUDITS INTERNAL CONTROL FUNCTIONING

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Abstract

The purpose of this paper is to holistically examine internal audit's internal control functioning, by adopting a data transformation triangulation design. This entailed using questionnaire data and transformed qualitative content analysis data, to perform triangulation. It was found that internal audit functions (IAFs) are important role players in assisting audit committees in their internal control oversight responsibility and that a broad range of internal control work is performed by internal audit. However, in the public eye, there is scant information on IAFs' functioning and a gap exists between what IAFs actually do and what is presented in public annual reports. The methodology used can be useful for future mixed method studies exploring the broad field of internal auditing. The results of this paper can be used as a starting point to create guidance on internal audit disclosure in public reports and to cultivate further research in the area of internal audit disclosure.

Keywords: Internal Audit, Internal Control, Mixed Methods, Triangulation, Atlas.Ti, Audit Committees
JEL Classification: M42, M48
DOI: 10.22495/cocv14i2c2p4

1. INTRODUCTION AND BACKGROUND

Internationally, legislation such as the Foreign Corrupt Practices Act and the Sarbanes-Oxley Act, contributed to increased responsibility placed on boards and audit committees. This is also evident in South Africa with the King Code of Governance (King III). Audit committees are tasked with reporting back to the board of directors on the state of internal control (especially as it relates to internal financial control), risk management and governance processes (Ferreira, 2007:3). Internal auditors are greatly involved in these areas and are thus in a good position to serve as 'informants' to audit committees which cannot be present on a day-to-day basis. Internal audit can thus assist audit committees in achieving their internal control, risk management and governance oversight responsibilities (Zaman & Sarens, 2013:499).

Audit committees are dependent on internal audit for information and their effectiveness revolves around a strong and well-resourced internal audit function which is able to aid audit committees in meeting their oversight responsibilities (Marx & Voogt, 2010:21). Internal audit should therefore reduce the lack of information availability to the audit committee on matters concerning risk management, internal control and governance. This is emphasised by the Institute of Internal Auditors' Research Foundation (IIARF) (2013:17, 18) which states that "internal audit is being asked by the audit committee to do more than ever before, in identifying emerging risk, providing assurance on the adequacy of the organization's enterprise risk management processes, assessing the adequacy of governance practices, and more". A study conducted by van der Nest (2006:v.232) found that 40% of audit committees in national government departments in South Africa are not yet effective and are not contributing towards improving internal control, risk management, governance and financial reporting practices. Moreover, van der Nest (2008:182, 184) found that audit committees' effectiveness in contributing to risk management, internal control and governance was measured at 63%, 76% and 62% respectively, indicating that their oversight in these areas, especially risk management and governance, is not yet effective.

2. PROBLEM FORMULATION

Various role players in the combined assurance model were blamed for corporate failures such as Enron and WorldCom – and this was partly because of the performance failures of audit committees and internal audit (Ferreira, 2007:4; Arena & Azzone, 2007:92). Marx (2008:xlvii) notes that important governance structures such as the audit committee and internal audit were aware of transactions which led to the demise of Enron. This clearly suggests that the IAFs may not have been functioning properly. Lenz and Sarens (2012:534) further reference major collapses such as Parmalat, Ahold and Lehman Brothers as all being due to corporate governance and risk management failure, areas which are critical for the scope of internal auditors. In a study conducted by Mjiyako (2006:1, 2, 3), it is clearly stated in the 2002-2003 Auditor-General reports in South Africa that IAFs were not functioning as they should be. IAFs were unqualified and inexperienced, they performed duties which they should not have been performing and users were unable to rely on their work. Similar comments were made by the Auditor-General in South Africa who stated that audit committees and internal audit were “in part to blame for auditees not obtaining clean audit reports” (Auditor-General South Africa, 2012:86). The Auditor-General South Africa specifically stated that IAFs do not adequately evaluate internal control and therefore did not fully communicate with the audit committee on matters such as accounting, risk management and loss control (Auditor-General South Africa, 2011:32; Auditor-General South Africa, 2012:86; Auditor-General South Africa, 2013:31, 35, 75, 103). The Auditor-General South Africa (2012:87) deduced that audit committees are not yet effective in local government, to a large extent due to lack of interaction and information flow from internal audit to executive councils and mayors.

In the municipal context in South Africa, internal audit functions are legally mandated to exist and play an important role acting as consultants and assurance providers on internal control, risk management and governance. For audit committees to be effective in their oversight responsibilities, they need relevant information from internal audit. If such information is unavailable, key decisions will be based on inaccurate, incomplete and unreliable information (Auditor-General South Africa, 2012:87; Hooper, 2013:15). This sentiment is also echoed by Marx (2008:30) in his doctoral study on audit committees:

“For the audit committee to effectively perform its financial reporting and control oversight role, it is essential that the committee is provided with all the relevant information and facts in an open, honest and transparent manner. As such, the internal and external auditors are often seen as the “eyes and ears” of the audit committee”.

From the preceding paragraphs it is clear that internal audit plays a crucial role in assisting audit committees to meet their objectives, namely, internal control oversight, risk management oversight, governance oversight and financial reporting oversight. It is clear that pressure exerted on IAFs via audit committees amongst others, emphasises the importance of having a properly functioning IAF. If internal auditors wish to continue being an important aspect of the combined assurance model, they need to address the critical areas of internal control, risk management and governance as part of their work. If not, it follows that the board, audit committees and other levels of management will remain uninformed on the status of these matters which, in turn, will negatively impact the ability of these stakeholders to discharge their responsibilities. This study thus focuses on analysing the functioning of IAFs within metropolitan municipalities in South Africa, with specific reference to their internal control mandate by obtaining a holistic view on their internal control functioning performed and the extent this work is assisting key stakeholders. Due to the broad scope of work of IAFs, other articles will explore their risk management and governance mandate.

3. LITERATURE REVIEW ON INTERNAL AUDIT’S INTERNAL CONTROL RESPONSIBILITY

Standard 2130 states that internal audit can contribute to the improvement of control processes by evaluating control effectiveness and efficiency and by promoting continuous improvement (IIA, 2012). Furthermore, the controls that are evaluated must be based on the risks which exist within the entities’ governance, operational and information systems processes (Marks, 2013:54). Within these processes, entities have broad objectives, namely:

- Achievement of strategic objectives;
- Reliability and integrity of financial and operational information;
- Effectiveness and efficiency of operations and programmes;
- Safeguarding assets; and
- Compliance with laws, regulations, policies, procedures and contracts.

Overall, internal audit’s involvement in internal control entails determining whether policies and procedures exist for all business processes. Internal audit documents an understanding of the control activities with the overall aim of testing whether they are functioning as intended. Internal auditors are therefore in a position to identify control weaknesses and make recommendations to improve current controls, thus assisting the entity to achieve its business objectives.

It is important to note that while testing controls, internal audit provides reasonable assurance on whether the controls are working as intended. This includes establishing whether the highest levels of productivity were maintained with the available resources across all processes within an entity. In essence, internal audit must also determine whether control activities within organisations are executed in the most efficient manner by employees of the organisation (Gabrini, 2013:32; Zaretto, 2014:31). Therefore, whilst testing internal controls, internal audit as part of its audit procedures, must determine whether the entity is functioning productively with the available resources.

In cases where internal audit provides consulting engagements, the knowledge and status of controls gained during those engagements must be used in assurance engagements (IIA, 2012:12). Other best practices provide clear guidance to CAEs on internal audit functionality regarding control processes. The CAE must develop a flexible internal audit plan (Begelfer, 2012:33) which allows sufficient scope to assess control processes for all major business units and must include major control processes. The plan must allow for the collection of sufficient and appropriate evidence on the status of control processes so that the opinion of the CAE is based on hard evidence. The work of others can also be considered in formulating the final opinion on whether the controls are operational. While evaluating the overall effectiveness of the entity’s control processes, the CAE must determine (IIA, 2013):

- Whether significant discrepancies or weaknesses in control were discovered;
- Whether corrections or improvements were made after the discovery of weak controls; and
- Whether the weaknesses discovered could lead to unacceptable risk exposure for the entity.

All the work on control evaluation must be presented in a report highlighting the importance of controls, the nature and the extent of testing performed by internal audit and the extent of reliance placed on the work of others (IIA, 2013).

During the audit of information reliability and integrity, internal audit must establish whether senior management understands that information reliability and integrity controls are their responsibility. The CAE must produce an audit team which is competent to perform the information reliability and integrity audit. Should any weaknesses breaching information reliability and integrity be identified, the CAE must communicate this to the board and assess those controls on a periodic basis (IIA, 2013).

Effective control over personal information in an important element of governance, risk management and control processes (IIA, 2013). It is good practice for entities to establish a privacy framework and internal audit plays a key role in evaluating the adequacy of controls relating to privacy frameworks (IIA, 2013). While assessing controls relating to the privacy framework it is recommended that internal audit:

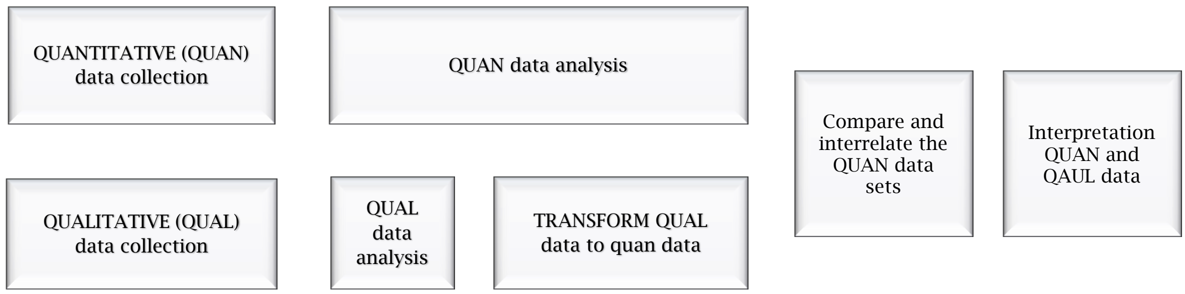
- Consider the laws, regulations and policies relating to privacy in the jurisdiction in which it operates;
- Liaise with the in-house legal department to identify laws and regulations applicable to the privacy framework of the entity;
- Liaise with IT to determine that information security and data protection controls are in place and working; and
- Assess the level of maturity of the entity's privacy practices.

4. RESEARCH DESIGN AND METHODS

4.1. The selected research design for this study

A mixed methods approach is followed in this study, and specifically, a data transformation triangulation model. This design allows for both quantitative and qualitative data to be collected concurrently which can be combined to give an overall picture of a certain phenomenon as part of the final discussion of findings (Edmonds & Kennedy, 2013:149; Grbich, 2013:29). The data from all the sources is therefore complementary in contributing to the research problem. Figure 1 below provides an overview of the data transformation triangulation model adopted in this study.

Figure 1. Data transformation triangulation design



Source: Creswell, n.d:63

Both qualitative and quantitative data was collected during the study. This data was analysed separately and the qualitative findings were then transformed into quantitative data which was compared with the quantitative results.

4.2. Qualitative data collection and analysis procedure

The latest public annual reports were obtained from the various websites of the eight metropolitan municipalities in South Africa. These documents were uploaded onto Atlas.ti which was used to perform a coding exercise. Qualitative content analysis and enumerative content analysis (Grbich, 2013:191, 195) was used to provide a deep textual description of the functioning of IAFs as presented in the public annual reports. The reports were coded using a concept-driven approach. For the concept-driven coding, a coding frame was developed which was imposed on the eight public annual reports. This analysis was focused on internal audit only, applying the relevant coding scheme. The coding schemes and methodological procedures are discussed below.

4.2.1. Concept-driven coding scheme imposed on public annual reports

In order to retain focus, a coding frame was developed for the qualitative content analysis. In the analysis of the annual reports, the following key aspect was focused on:

Whether internal audit's scope of work includes matters concerning internal control.

The coding exercise was aimed at enabling a rich description of the above area based on what was found in the public annual reports (Schreier, 2012:63). In order to collect data on the above area, the following coding scheme was imposed on the public annual reports, again derived from literature, and focusing on the key aspect above. Any evidence which could be found on the above area was categorised into the following code (Schreier, 2012:60):

Table 1. Imposed coding scheme for public annual reports

Focus areas	*Main categories*	*Code assigned in MFMA annual report to collect evidence on the main category*	*Code descriptor and examples*
Whether internal audit's scope of work includes matters concerning internal control	Internal control	Internal control mandate	Any statements or segments of texts in the public annual reports which indicated that internal audit was involved in internal control were correspondingly coded using the codes. For example, "internal audit evaluate the adequacy of controls" was coded "Control mandate". This provided evidence that internal audit was perceived as being involved in its core area of internal control

4.2.2. Transformation of qualitative coding to quantitative data

After applying the coding scheme to the public annual reports, Atlas.ti was used to extract qualitative text from the specific categories for visual presentation. The segments of text with their assigned codes were also transformed into frequency counts using Atlas.ti to change the qualitative text into quantitative data. This is known as *quantitising*, a process whereby qualitative data is transformed into quantitative data (Sandelowski, Voils & Knafl, 2007:208, 209) by assigning numerical values to qualitative text. In this case, frequency counts (Driscoll, Appiah-Yeboah, Salib & Rupert, 2007:22) of a specific code were done using Atlas.ti after imposing the coding schemes explained above. These frequency tables show the number of times that references were made to a specific code and it assisted by showing which areas were most prominently disclosed about IAFs in public annual reports. These frequency counts were further transformed by summing the counts.

4.3. Quantitative data collection and procedures

The functioning of internal audit, as defined by literature, law, internal audit *Standards*, best practice such as the internal audit practice advisories and other rules and regulations, was used to design a questionnaire. The questionnaire was distributed to audit committee chairpersons at the eight selected metropolitan municipalities in South Africa. They were asked to document their views on internal audit functioning as it relates to their internal control functioning. The questionnaires were compiled using Google Drive and the Google Forms function. The questionnaires were completed online via a Uniform Resource Locator (URL) and were sent to the municipalities. Once the forms were completed, they were submitted online. The responses were then extracted into Excel, from where they were captured into the IBM Statistical Analysis Software Package (IBM SPSS) for analysis. Descriptive statistics were used to present the data in tables and figures. The responses were summed to be compared with the transformed qualitative texts.

4.4. Sampling strategy

Purposive sampling was used to form the basis of the selection of the eight metropolitan municipalities in South Africa. Although the term 'purposive sample selection' is the broad sampling technique, Patton (1990:169) and (2003:3, 5) argues that there are many strategies available to purposefully select *information-rich* cases or samples (also stated by Akengin, 2008:128). In essence, whichever strategy is used under purposive sampling, the goal is the same, namely, to select *information-rich* cases that are intentionally selected to fit a study.

Specifically, a criterion sample selection strategy was used to select samples. The samples must meet predetermined criteria of importance and these criteria can make the samples prone to in-depth enquiry (Patton, 1990:176, 177; Sandelowski, 2000:248). The criteria can be created by the researcher or can consist of a list prepared beforehand (Akengin, 2008:129). Sandelowski (1992), as cited by Coyne (1997:628), refers to this sample selection approach as "sampling subjects according to a preconceived but reasonable set of criteria".

According to the Municipal Structures Act (MSA) 117 of 1998, the following criteria must be met for a municipality to be declared a status of metro (Government Gazette, 1998:s2).

An area must have a single category 'A' municipality if that area can reasonably be regarded as:

1. A conurbation featuring:
    - Areas of high population density;
    - An intense movement of people, goods and services;
    - Extensive development;
    - Multiple business districts and industrial areas.
2. A centre of economic activity with a complex and diverse economy;
3. A single area for which integrated development planning is desirable; and
4. Having strong interdependent social and economic linkages between its constituent units.

In South Africa, the only municipalities meeting these criteria are the eight metropolitan municipalities. They are thus regarded as *information-rich* and conclusions reached could be informative to other settings.

5. PRESENTATION OF RESULTS

5.1. Qualitative text matrices from public annual reports

The following sections provide a qualitative discussion of the functioning of IAFs in metropolitan municipalities in South Africa, as reflected by public annual reports. Table 2 below presents the qualitative findings which were derived by imposing the concept-driven coding scheme explained in Section 3. To protect the confidentiality of the municipalities, pseudonyms were used throughout the empirical study.

Internal control is one of the three core functional areas defined in *Standard 2100.* It follows then, that if internal audit wishes to add value, it must provide internal control consulting and assurance services to the metro. After the analysis of the annual reports of the metros, the following items were evident as they relate to internal audit's internal control mandate.

Table 2. Internal audit's work on internal control

	Metro A	*Metro B*	*Metro C*	*Metro D*	*Metro E*	*Metro F*	*Metro G*	*Metro H*
CONTROL MANDATE	• Regular reviews of the system of internal control • Compliance testing relating to acts and regulations • Control testing on absenteeism and overtime claims	• Evaluate and improve control processes • Assess the efficiency, adequacy and effectiveness of controls • Audit of operational efficiency and effectiveness • Controls audited are those affecting the municipality's strategic objectives • Inform audit committee quarterly on control testing done	None	• Identify weak controls • Evaluate adequacy and effectiveness of controls • Review the reliability and integrity of financial and operating information • Report on such findings • Compliance testing on laws, policies and procedures of the municipality • Evaluate controls over the safeguarding of assets • Appraise the economy and efficiency with which resources are employed	• Contribute to the control environment by evaluating and improving the effectiveness of controls • Compliance testing of laws, regulations, policies and procedures • Adequacy and cost-effectiveness of implemented controls • Identify weak controls • Value for money audits – evaluation of the efficiency, economy and effectiveness of operational and managerial controls • Identify areas of wastage and inefficiency • Monitor disposition of controls identified by external audit	• Compliance testing on policies and procedures • Evaluate controls resulting in high residual risks • Advise the municipality on the system of internal control	Perform continuous audit reviews on internal control systems and procedures	• Written assessment of the effectiveness of internal control, including internal financial controls • Advise audit committee on serious breakdowns in internal control • Audit controls outside the risk appetite of the municipality

Source: ATLAS.ti output, "Control Mandate", Metro A – Metro H

It can be seen from Table 2 above that there is significant variation between the different metros in what internal audit discloses regarding its internal control work as well as the extent of description of what is being done. It is also clear that very broad statements are used to describe how internal audit is contributing to the internal control system of the metros. Furthermore, internal audit's mandate regarding internal control is broad and multifaceted, which is not clearly described in the annual reports.

In order to better understand the qualitative text matrices, Table 3 below summarises the work areas using enumerative content analysis (Grbich, 2013:195). Table 3 above shows the number of times reference was made to the core mandate of internal audit in the public annual reports of the metropolitan municipalities. Within the control mandate function, Metro B made the greatest number of references to how its IAF contributes to internal control.

Table 3. Quantified qualitative text

	Control mandate	*%Total*
Metro A	4	11.76%
Metro B	9	26.47%
Metro C	0	0.00%
Metro D	8	23.53%
Metro E	7	20.59%
Metro F	2	5.88%
Metro G	1	2.94%
Metro H	3	8.82%

Source: ATLAS.ti output

It is clear from Table 3 that inconsistencies exist between what is being reported in terms of the focus area identified. There are also inconsistencies in the frequency of reporting on the focus areas between the municipalities in the public annual reports. For example, Metro C makes no reference to what internal audit is doing regarding internal control.

5.2. Descriptive results from audit committee questionnaires

The following sections discuss audit committee views on internal audit's internal control mandate and the extent to which these areas assist audit committees in discharging their oversight responsibility.

5.2.1. Audit committee views on internal audit's control evaluations

Audit committees are tasked with, amongst other things, internal control oversight responsibility, especially as it relates to internal financial control (MFMA, 2003:s166). IAFs are in a perfect position to provide feedback to audit committees on the state of internal controls within municipalities as they are largely tasked with providing an independent, objective evaluation of the efficiency and effectiveness of internal controls. Table 4 below demonstrates the extent to which internal audit assists audit committees with internal control oversight responsibly with reference to specific control evaluations.

Table 4. Audit committee views on internal audit's control evaluation

				Percent	
Work area	***To a lesser extent***	***To a large extent***	***Total***	***To a lesser extent***	***To a large extent***
Evaluation of control effectiveness (D10.1)	1	7	8	12.50	87.50
Evaluation of control efficiency (D10.2)	1	7	8	12.50	87.50
Evaluation of the adequacy of controls (D10.3)	1	7	8	12.50	87.50
Evaluation of controls leading to high risk exposure (D10.4)	2	6	8	25.0	75.0

Source: *Calculated from IBM SPSS*

According to the *Standards* and the definition of internal auditing, internal audit must evaluate the effectiveness, efficiency and adequacy of controls. Audit committees in metros found these work areas useful to a large extent in assisting them in their internal control oversight responsibility. Internal audit's evaluation of control effectiveness, control efficiency and adequacy was regarded as assisting audit committees to a large extent (87.50%). In addition, evaluations of weak controls which could lead to high residual risk, assist audit committees (75%) in their internal control oversight responsibility. This is positive as the Treasury Regulations task internal audit with conducting engagements according to the *Standards* and this corresponds to recommendations in King III, which state that internal audit must provide the audit committee with a written report on the status of internal financial control. It is clear that the control testing of internal audit is regarded as very important to audit committees and that internal audit is serving audit committees well in that regard.

5.2.2. Audit committee views on internal audit's information integrity and reliability assessments

Table 5. Audit committee views on internal audit's information integrity and reliability assessments

				Percent	
Work area	***To a lesser extent***	***To a large extent***	***Total***	***To a lesser extent***	***To a large extent***
Evaluation of information integrity and reliability (D10.5)	2	6	8	25.0	75.0
Communications of weaknesses in information integrity and reliability (D10.7)	2	6	8	25.0	75.0
Recommendations on information integrity and reliability (D10.8)	2	6	8	25.0	75.0

Source: Calculated from IBM SPSS

One area where internal audit can add value to audit committees is through its evaluation of the efficiency and effectiveness of internal controls, especially as they relate to financial statements. Audit committees (75%) found internal audit's evaluations of information integrity and reliability useful in assisting them in their internal control oversight responsibility. Furthermore, communication of weaknesses and recommendations on improving ineffective controls in information integrity and reliability assisted audit committees in their oversight responsibility (75%). Information integrity and reliability are of the utmost importance as this information forms the basis for important decision-making, be it by audit committees or senior management. Internal audit plays a crucial role in providing independent, objective feedback on the integrity and reliability of information distributed through municipalities.

5.2.3. Audit committee views on internal audit's specific control evaluations

Table 6 below summarises the results.

Table 6. Audit committee views on internal audit's specific control evaluations

				Percent	
Work area	***To a lesser extent***	***To a large extent***	***Total***	***To a lesser extent***	***To a large extent***
Evaluation of controls contributing to strategic objectives (D10.9)	1	7	8	12.50	87.50
Evaluation of controls contributing to reliability and integrity of financial and operational information (D10.10)	1	7	8	12.50	87.50
Evaluation of controls contributing to legal and regulatory objectives (D10.11)	1	7	8	12.50	87.50

Source: Calculated from IBM SPSS

Audit committees in municipalities are tasked with providing advice to municipal council, the accounting officer, political office-bearers and management on matters relating to the adequacy, reliability and accuracy of financial reporting and information (MFMA, 2003:s166). Furthermore, advice must be given on compliance with the MFMA, the Division of Revenue Act and any other applicable legislation, as deemed necessary (MFMA, 2003:s166). This can be a difficult task for members who are not involved in the day-to-day operations of the municipality. In this regard, internal audit assists audit committees to a large extent; 87.50% of audit committees in metros stated that internal audit's evaluation of controls contributing to the reliability and integrity of financial and operation information assisted them in their internal control oversight. Moreover, 87.50% of audit committees in metros stated that internal audit's evaluation of controls contributing to legal and regulatory objectives assisted them. The fact that internal audit evaluates the reliability of financial information greatly assisted audit committees in their review of the financial statements, seeing that they are required to provide council feedback on the financial statements.

5.2.4. Audit committee views on internal audit's privacy audits

Table 7 below summarises the results.

Table 7. Audit committee views on internal audit's privacy audits

					Percent		
Work area	***Not at all***	***To a lesser extent***	***To a large extent***	***Total***	***Not at all***	***To a lesser extent***	***To a large extent***
Evaluation of the maturity levels of municipalities' privacy practices (D10.6)	2	2	4	8	25.0	25.0	50.0
Evaluations of the municipalities' privacy framework (D10.12)	2	4	2	8	25.0	50.0	25.0
Coordination with the legal department during privacy audits (D10.13)	3	3	2	8	37.50	37.50	25.0

Source: Calculated from IBM SPSS

Internal audit's work on the privacy practices of municipalities did not assist audit committees in achieving their internal control oversight responsibility. In all three areas in Table 7 audit committees felt that internal audit's work on privacy practices and frameworks was of little use to audit committees. This could be due to the fact that audit committees do not have a direct responsibility relating to the municipalities' privacy practices and frameworks. However, on a municipal level, the work of internal audit could be of value as it could assist municipalities in areas where non-compliance exists regarding privacy rules and regulations.

5.2.5. Audit committee views on internal audit's promotion of continuous improvement activities

Table 8 below summarises the results.

Table 8. Audit committee views on internal audit's promotion of continuous improvement

Continuous improvement in internal control	***Not at all***	***%***	***To a lesser extent***	***%***	***To a large extent***	***%***	***Total response***
Internal audit's promotion of continuous improvement in internal controls (D10.14)	1	12.50%	-	-	7	87.50%	8

Source: Calculated from IBM SPSS

The fact that internal audit is involved in the continuous improvement of internal control processes, assisted audit committees in their internal control oversight responsibility (87.50%). Best practices such as King III state that internal audit should serve as a source of information on matters concerning fraud, corruption, unethical behaviour and irregularities. By promoting continuous improvement in internal control, internal audit stays abreast of the latest internal control issues within the municipality, which assists audit committees.

5.2.6. Audit committee views on internal audit's risk assessment processes

Table 9 below summarises the results.

Table 9. Audit committee views on internal audit's risk assessments of control processes

Risk assessment of control processes	***Not at all***	***%***	***To a lesser extent***	***%***	***To a large extent***	***%***	***Total response***
Internal audit's risk assessment of control processes (D10.15)	1	12.50%	-	-	7	87.50%	8

Source: Calculated from IBM SPSS

According to the MFMA, audit committees must act in an advisory capacity on the risk management processes of municipalities. Internal audit can assist in this regard by performing risk assessments of control processes to determine whether the controls are effective and efficient in mitigating risks. Audit committees stated (87.50%) that this assisted them to a large extent in their internal control oversight responsibilities.

5.2.7. Audit committee views on internal audit's communications on internal control

Table 10 below summarises the results.

Table 10. Audit committee views on the usefulness of internal audit's communications

				Percent	
Work area	*To a lesser extent*	*To a large extent*	*Total*	*To a lesser extent*	*To a large extent*
Communication of weaknesses and improvements in internal control (D10.17)	1	7	8	12.50	87.50
Communication on the nature and extent of control testing (D10.18)	2	6	8	25.0	75.0
Preparation of an internal audit plan allowing for control testing (D10.19)	1	7	8	12.50	87.50
Opinion on the status of the system of internal control (D10.20)	1	7	8	12.50	87.50

Source: Calculated from IBM SPSS

Internal audit performs its job effectively if it communicates the work it has performed. This is reflected by the audit committees (87.50%) which felt that internal audit's communication of weaknesses and improvements in internal control assisted them to a large extent in their internal control oversight responsibility. Best practice requires audit committees to approve the internal audit plan and in effect, this is the point where internal audit informs the audit committee on the control testing that needs to be performed. Audit committees are thus able to provide input into the plan. In this regard, audit committees in metros (87.50%) felt that the fact that internal audit prepares an internal audit plan which allows for internal control testing greatly assists them in their oversight responsibility. Lastly, audit committees must provide feedback on the status of internal control, especially as it relates to internal financial control, to municipal council and other management staff. The fact that internal audit provides an opinion on the status of the system of internal control assisted audit committees (87.50%) to a large extent in their internal control oversight responsibility.

5.2.8. Audit committee views on internal audit's knowledge and experience obtained from other audits

Table 11 below summarises the results.

Table 11. Audit committee views on internal audit's knowledge and experience obtained from other audits

Knowledge from other audits	*Not at all*	*%*	*To a lesser extent*	*%*	*To a large extent*	*%*	*Total response*
Internal audit's knowledge/experience obtained from other audits (D10.16)	-	-	2	25.00%	6	75.00%	8

Source: Calculated from IBM SPSS

Seventy-five per cent of audit committees felt that the fact that internal audit uses knowledge and experience gained from other audits contributes to the ability of audit committees to fulfil their internal control oversight responsibility. Seeing that audit committees must possess such broad knowledge of the municipality they serve, this result shows that through their detailed knowledge, internal audit is able to serve as a source of information to the audit committee.

6. POINTS OF TRIANGULATION

As part of the research design, it was explained that a data transformation triangulation model (Creswell, n.d.) had been adopted in this study. Qualitative analysis of the annual reports for the metropolitan municipalities in South Africa were presented in a text matrix. The areas coded were then transformed into frequency counts (Creswell, n.d.) which made the data quantitative (see Table 3). The frequency counts was further transformed and compared with the audit committee questionnaires in order to obtain a holistic view on internal audits internal control mandate.

For the work area (internal control), the total amount of work as per the annual reports was calculated by summing the frequency counts (total perceived work per annual reports). During the literature review, the study defined 20 internal control areas of what internal audit must do and these were used to design the questionnaire. This amount was multiplied by eight (all the municipalities) to arrive at the totals (defined work per literature review). This was expressed as a percentage by dividing the total perceived work per annual report with the defined work in the literature. The frequency counts were thus further transformed into quantitative data. This transformation is shown in Figure 2 below.

Based on annual report data, the perception given is that internal audit only performs 21% of possible internal control work. This is a negative perception for the reader of public annual reports and is not a true reflection of the work performed by internal audit. The audit committee responses on the areas of internal control were totalled for those areas where audit committees had indicated both 'to a large extent' and 'to a lesser extent' in the audit committee questionnaire. Table 12 below shows the results.

Figure 2. Summed frequency counts for all metros

	Control mandate	***%Total***
Metro A	4	11.76%
Metro B	9	26.47%
Metro C	0	0.00%
Metro D	8	23.53%
Metro E	7	20.59%
Metro F	2	5.88%
Metro G	1	2.94%
Metro H	3	8.82%

Work area	***Control***
Total perceived work per annual reports	34
Defined work per literature review	160
Expressed as a percentage	*21%*

Table 12. Totalled audit committee responses against public annual report data

Work areas	***Control***
Total actual work as per audit committee questionnaires (all metros)	159
Defined work per literature review	160
Expressed as a percentage	*99%*
Annual report data from figure 2	*21%*

From Table 12 it is clear that the scope of work carried out by internal audit is much greater than what is depicted in the public annual reports. Audit committees in metros indicated that internal audit conducted 99% of internal control work (vs 21% in annual reports).

7. CONCLUSIONS

This study employed a mixed methods approach to viewing internal audit's internal control functioning. The questionnaire data showed that internal audit is a key role player in assisting audit committees in their internal control oversight responsibility and that a broad range of internal control work is performed by internal audit. The content analysis of public annual reports showed scant information on the work carried out by internal audit, and discrepancies exist between what they are doing and the extent of work they perform. The triangulation of the questionnaire data and transformed qualitative content analysis provides a new dimension to the results, indicating that internal audit is doing much more than is depicted in public annual reports. This highlights gaps in internal audit disclosure practices and a need exists to further explore internal audit disclosure practices in order to establish demand for disclosure. The disclosure of internal audit work in public annual reports could lead to more transparency, increased public confidence and ultimately better functioning IAFs, as they will be under public scrutiny.

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MANAGEMENT CONTROL SYSTEMS, CULTURE, AND UPPER ECHELONS – A SYSTEMATIC LITERATURE REVIEW ON THEIR INTERACTIONS

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Abstract

This systematic literature review of 99 empirical studies, between 1926 and 2016, synthesizes evidence on the interaction of management control systems (MCS) with both national culture and corporate culture. We cast our net widely by considering MCS as a package in relation to macro (national), meso (organizational) and micro culture (upper echelon theory). The literature reviewed suggests that evidence on the interaction of culture and MCS is highly fragmented, and only some authors find that culture matters for MCS. The main reason for these inconsistent findings is that studies investigating organizational MCS tend to focus only on one aspect of culture (macro, meso, or micro). This impairs a comprehensive understanding of the MCS-culture relationship. Our main insight is that culture affects MCS, provided that culture is considered as a multi-layered phenomenon that combines internal aspects of culture – e.g., upper echelon theory – with external aspects of culture, e.g., national culture. The contemporary literature mostly limits itself to discussing whether national culture matters for MCS. Hence, this focus is slightly misguided. Future studies should rather inquire which aspects of culture interacts with MCS across varying contexts.

Keywords: Management Accounting, Management Control Systems, Culture, Upper Echelon Theory, Budgeting, Activity-Based Costing, Balanced Scorecard

JEL Classification: M10, M41

DOI: 10.22495/cocv14i2c2p5

1. INTRODUCTION

In order to manage an organization, managers need to influence decision making and behavior of individuals within an organization. Generally, several mechanisms steer human behavior. Two quite prominent ones are management control systems (MCS) and culture. MCS can be defined as *"systems, rules, practices, values and other activities management put in place in order to direct employees behaviour"* (Malmi and Brown, 2008, pp. 290). As such, MCS support decision making and functions as a behavior modification mechanism for individuals within an organization (Birnberg and Snodgrass, 1988). At the same time, the phenomenon of *culture* is seen as a major force that guides individuals' decision making and behavior (Birnberg and Snodgrass, 1988, pp. 448). Therefore, MCS and culture could be regarded as both complementing and competing forces that shape human decision making and behavior. The interaction between MCS and culture is of importance to practitioners when designing MCS in order to achieve the desired results. In particular, it is of importance to multinational companies when implementing their domestic MCS overseas. Managers might need to redesign them, partly to establish a better fit with the different culture (Dalby et al., 2014; Harrison and McKinnon, 1999, p. 483), since MCS *"which operate well in one national environment may work very differently in another national culture"* (Otley, 2016, p. 54). This is consistent with contingency theory, which states that "*particular features of an appropriate accounting system will depend upon the specific circumstances in which an organisation finds itself*" (Otley, 1980, pp. 413). Hence, MCS and culture might compete or enforce each other in influencing behavior.

This conundrum has sparked a significant amount of research on the effect of culture and on the cross-cultural application of MCS (e.g. Shields, 1995; Harrison, 1992; Brewer, 1998; Harrison and McKinnon, 1999). Research on culture has primarily focused on national culture (Hofstede, 1980, 1991, 2010; Gray, 1988) and to some extent organizational culture (Dent, 1991; Goddard 1997a; Goddard, 1997b). Yet, there is no consensus on whether these aspects of culture have an effect on MCS (Chow et al, 1991, 1994, 1999b). Many empirical studies remain unclear in their definitions of culture. Most of them deal with national culture, but still, findings remain fragmented as studies focus on different dimensions of national culture (Harrison and McKinnon, 1999; Chenhall, 2003). Moreover, research has focused exclusively on the national value dimensions by Hofstede while ignoring other concepts of culture. This has lead researchers to call for further research on the interaction of MCS and culture from a holistic point of view (Harrison and McKinnon, 1999, pp.

502). Birnberg (2004) specifically proposes more research in management accounting on the topic of organizational culture rather than national culture. A broader focus of culture that addresses different aspects of culture is desirable. Specifically, we would like to understand the reciprocal relationships of culture and controls. The purpose of this paper is therefore to identify, analyze and synthesize evidence to answer the research question: *"How does culture interact with management control systems?"*

For this, we conduct a *systematic* literature review on empirical studies (Denyer and Tranfield, 2011; Rousseau et al, 2008; Massaro et al, 2016) following the usual steps of application[4]. We systematically searched the 57 accounting journals rated 2-4 in the Chartered Association of Business Schools' Academic Journal Guide (ABS) 2015 from – where available – 1926 to 2016 for the keyword '*culture*' in abstract, title and keywords. Out of 2,592 initial hits using databases like ScienceDirect and Business Source Complete, we read the articles' abstracts, titles, keywords and introductions to identify the relevant set of articles (n=94). We then traced relevant literature that was cited ("*ancestor approach*"; cf. Cooper, 1982) or citing these articles ("*cited by*" on GoogleScholar). We ended up with n=99 relevant sources.

Most of the literature reviewed focuses on aspects of national culture, but this paper discusses how other aspects of culture may explain some of the contradicting findings through a definition of culture that is much wider than what we encounter in the literature. As such, we have developed a definition of culture, and the findings of the review are led by a discussion on whether it is culture that influences MCS or MCS that influence culture. We use the framework on MCS by Malmi and Brown (2008) to structure this discussion, where especially the cultural controls of the framework are of significance[5].

2. THEORETICAL BACKGROUND ON THE RELATIONSHIP OF MCS AND CULTURE

The discussion of why culture is of relevance to MCS relates to contingency theory, which views the organization as an open system for which no general optimal structure exists (Burkert et al, 2014), since people have different patterns of behavior (Hopper and Powell, 1985). As culture can "*provide a synergistic element to the control system and facilitate its operation"* (Birnberg and Snodgrass, 1988, p. 447), the interaction of culture and MCS becomes very relevant. Culture is "*the way in which a group of people solves problems and reconciles dilemmas"* (Trompenaars and Hampden-Turner, 1997, p. 6). In relation to contingency theory, we can make a distinction between seeing culture as an internal, manageable variable or as a given, external variable, such as national culture (Goddard, 1997a, 1997b; Otley, 2016).

2.1. National culture

Hofstede's work on national culture consists of six cultural value dimensions which describe the culture of a nation and how this affects the values of the members of the given nation (Hofstede, 1980, 1991; Hofstede et al, 2010). However, there has been *"An almost total adoption of the…work of Geert Hofstede"* (Harrison and McKinnon, 1999, pp. 484) by management accounting researchers. The six dimensions identified by Hofstede are the following: *Power distance* addresses whether members of society accept an unequally distribution of power. *Individualism vs. collectivism* depicts whether society members are mostly concerned with themselves or with the group. *Uncertainty avoidance* relates to whether society members feel comfortable in unstructured situations. *Masculinity vs. femininity*, where masculinity indicates focus on high-achievements and work prevailing over family. Femininity relates to a balance between family and work. *Long-term orientation vs. short-term orientation* addresses whether members are rather concerned with the past and the present, or the future. *Indulgence vs. restraint* is a measure of happiness related to whether social norms and control or human desires define society.

Hofstede has been widely criticized, with main critique points being that he equates nations with culture (Baskerville, 2003; Greer and Patel, 2000), and that the cultural dimensions do not distinguish between different levels of a given dimension (Harrison and McKinnon, 1999, pp. 496). For instance, the dimension of collectivism for the Japanese relates to the organization, while the Chinese relate to the family. This influences the types of MCS used. Whereas the Japanese have fewer controls than Americans do, these controls are as explicit to workers as the more bureaucratic controls present in the US (Birnberg and Snodgrass, 1988). Finally, replication of Hofstede's original study has yielded inconclusive findings (e.g. Smith et al, 1996; Baskerville, 2003), and studies that have measured the cultural dimensions of their samples have found that the scores obtained do not match the ones found by Hofstede (e.g. Lau et al, 1997; Lau and Eggleton, 2004; Stammerjohan et al, 2015). Questionnaire surveys of IBM employees in several different countries (117.000 questionnaires for 66 countries) identified the original cultural dimensions. Issues with this approach are that all respondents were from one single company and had the same occupational basis. Hofstede assumes that by keeping these two components constant, the differences found are the result of national culture (McSweeney, 2002).

Though the cultural dimensions developed by Hofstede are widely used, the assumption that there are no differences for organizational and occupational culture might be flawed. As such, a definition of culture for use in this paper needs to encompass not only *national* culture but also *organizational* and – what Hofstede labeled – *occupational* culture.

[4] For instance, cf. Albertsen and Lueg, 2014; Lueg and Julner 2014; Lueg and Silva, 2014; Lueg and Vu, 2015; Toft and Lueg, 2015; Lueg and Radlach 2016.

[5] More detailed as well as descriptive analyses are available from the authors upon request.

2.2. Occupational culture and upper echelon theory

In relation to occupational culture, upper echelon theory is of relevance. Upper echelon theory proposes that experiences, values and personalities of firm executives greatly influence their interpretations of the situations they face and, in turn, affect their choices (Hambrick, 2007), for instance their perceptions of risk (Borisov and Lueg 2012; Janiak and Lueg, 2016; Lueg and Borisov 2014). *"Management accounting and control systems can be seen as an organisational outcome…and … can thus be expected to also be influenced by top-manager characteristics"* (Hiebl, 2014, pp. 224). The organization is thus a reflection of its top managers (Hambrick and Mason, 1984), or put differently, the top executives partly shape the culture present in the organization (Berson et al, 2008).

Burkert and Lueg (2013) show how the educational background of the top management team (TMT) in business administration, especially of CFO's, is found to be associated with more sophisticated value-based management. Hiebl (2014), similarly, finds the educational background of the CFO to be of importance, but that for CEOs, the results are fragmented. Similarly, Fiss and Zajac (2004) find evidence that the shift from one governance model to another may ultimately depend on the interests and power of actors that make decisions in the organization. The importance of the TMT and its effect on culture should thus be considered.

One important aspect of upper echelon theory is that it depends upon the extend of managerial discretion, so that if a great deal of managerial discretion exists then upper echelon theory is a good predictor of organizational outcomes (Crossland and Hambrick, 2011). This is relevant for the cultural dimension of individualism/collectivism, as well as for the cultural dimension of uncertainty avoidance, where upper echelon theory may have a significant influence on the culture of an organization in countries scoring highly on individualism and where there is low uncertainty avoidance. We may assume that Managers in these countries have more discretion in their choices and, as such, they may influence the organizational culture of the organization more easily.

A study by Crossland and Hambrick (2007) that finds that CEOs in US firms have a greater effect on firm performance than CEOs in Japan and Germany due to national culture illustrates this. Japan and Germany score high on collectivism, so executives in those countries are limited in their ability to take decisions that may affect the collective. Japan and Germany also score highly on uncertainty avoidance compared to the US, where a high score of uncertainty avoidance often connects with resistance to change (Crossland and Hambrick, 2007). We find additional support for the dimensions of collectivism/individualism and uncertainty avoidance being influential on the level of managerial discretion in Crossland and Hambrick (2011), but we find no support for the dimension of power distance.

Thus, upper echelon theory, which may be linked to what Hofstede named occupational culture, and the cultural dimensions of Hofstede may be somewhat related and should be considered in unison rather than separately as Hofstede did. Hiebl (2014, pp. 224) proposes that including the individual influence of top managers on the design of management accounting and control systems would help to create a more comprehensive picture of the antecedents of such systems than studying environmental and firm-level factors alone would. This reflects the choice of this paper where we look at both environmental factors, in the form of national culture, and the role of the TMT.

2.3. Organizational culture

Organizational culture can be defined as *"the aggregation of the norms and values of the organization"* (Birnberg, 2004, pp. 11), implying that organizations have separate cultures from the national culture surrounding it. Goddard (1997a) divides organizational culture into internal and external variables of influence. The external variable relates to national culture, while the internal variable consists of corporate culture and organizational climate. The corporate culture variable relates to how leaders influence the development of organizational culture, while the organizational climate variable looks at managers' personal attributes. This is relevant for upper echelon theory which, in turn, influences the culture of an organization. Trompenaars and Hampden-Turner (1997), who link dimensions of national culture to preferences for specific forms of corporate culture, have also made the link between the external variable of national culture and organizational culture.

2.4. Defining culture for the purpose of this literature review

Culture thus consists of national culture, organizational culture and upper echelon theory as they all interact, and any definition of culture must encompass all aspects. The definition of culture used in this paper is the one by Riahi-Belkaoui (2004, pp. 381); *"Culture, through its components, elements, and dimensions, dictates the organisational structure adopted, the micro-organisational behaviour, and the cognitive functioning of individuals in such a way as to ultimately affect their judgement/decision process when they are faced with an accounting…phenomenon."* This definition changes the discussion of culture to be concerned with which aspects of culture will shape the behavior of people in the organization, organizational culture or national culture.

3. FINDINGS

3.1. Internal control and culture

The distinction between internal and external aspects of culture relates to three propositions by Berry et al. (2009, pp. 12) about culture and control. First, control can dominate culture, where managers can choose organizational culture. Second, culture can be equal to control, as it determines the norms and cognitions that shape the organization; control also reconstitutes culture. Third, culture can dominate control, where norms, cognitions and modes of order shape control structures and procedures. These propositions relate to the interactions of MCS and culture. In relation to the discussion on culture, there is a connection between control dominating culture, and internal variables of culture such as cultural controls and upper echelon theory. Similarly, there is a relation between culture dominating control and the external variables of national culture. We discuss these cases in separate subsections.

3.1.1. When control dominates culture (in the form of cultural controls)

The dominance of MCS over culture entails that the internal aspects of culture, i.e. organizational culture and cultural controls, overrule external influences of culture such as national culture. As such, the MCS of multi-national firms would not attune to national culture. Van der Stede (2003, pp. 263) finds that management control and incentive systems *"...tend to be uniformly implemented within firms, rather than to reflect local business-unit conditions"*, in support of control dominating culture. Similarly, Al Chen et al. (1997) find that Japanese subsidiaries in the US are mostly similar to domestic Japanese firms in their use of management accounting methods, reflecting Japanese values, which do not reflect US national values. Yee et al. (2008) also find a Japanese subsidiary located in Singapore to be using Japanese common budgeting practices. Similarly, O'Connor (1995) and O'Connor and Ekanayake (1998) find that foreign-owned subsidiaries in Singapore have a lower power distance organizational culture than their local counterparts, reflecting influences of their foreign parent-companies. These studies show how controls in subsidiaries, in other words, internal organizational culture, can overrule local national culture.

Soeters and Schreuder (1988) look at the interaction between national and organizational culture at the firm level in six accounting firms in the Netherlands. They find significant traces of US national culture in the organizational culture of the US firms' branches in the Netherlands, with especially differences in levels of uncertainty avoidance and masculinity. The study highlights how the internal culture of the branches takes precedence over aspects of national Dutch culture. Another noteworthy finding is the ascription of part of the difference to the mechanism of self-selection by the employees, where the work values of the employees are oriented towards US culture and the value dimensions of the US. This shows how individuals, within the Dutch culture, differ in their value dimensions, lending support to some of the criticism directed at Hofstede. Pratt et al. (1993) extended the study to an Australian and British setting, with similar results for the British setting and inconclusive results for Australia. Chow et al. (2002) extend the two previous studies by extending it to a Taiwanese setting as they argue that the national culture of Taiwan is very different from the Netherlands, Britain and Australia, yet the results are similar.

3.1.2. When culture is equivalent to control

Unison between MCS and control would imply that neither national culture nor organizational culture would shape the culture of the organization, but rather the MCS themselves would be driving the culture. Dent (1991, pp. 728) finds that *"…accounting can enter into organisational settings to constitute cultural knowledge in particular ways, creating particular rationalities for organisational action; and in turn how this can lead to new patterns of organization, of authority and influence, new concepts of time and legitimate action"*. Similarly, Busco and Scapens (2011) find that the introduction of Six-sigma changed the culture present in the organization significantly, illustrating how new accounting cultures become control.

3.1.3. When culture dominates control

Culture may also dominate MCS. Tsamenyi et al. (2008) find that national culture and social relations overrule MCS and make them less relevant in an Indonesian setting. Similarly, Wickramasinghe and Hopper (2005) find that attempts to impose conventional management accounting on an organization in Sri Lanka failed due to confrontations with the traditional local culture. This is similar to the study by Wickramasinghe et al. (2004) that shows how Japanese cost management was implemented in an organization in Sri Lanka but had to be discarded due to political pressure by employees that were dissatisfied due to a cultural misalignment. Efferin and Hopper (2007), similarly, look at how culture, ethnic differences, history, politics and commercial considerations shape management controls at a Chinese-Indonesian manufacturing company. Chow et al. (1999b) look at the effect of national culture on firms' design of and employees' preference for management controls in a Taiwanese setting. They find that Taiwanese culture had a stronger influence on the MCS than the original MCS of the US and the Japanese subsidiaries.

Yoshikawa (1994), similarly, claims that Japanese national culture has influenced the application of cost accounting and cost management in Japan. Granlund and Lukka (1998) propose that management accounting in Finland ties to national culture. Similarly, Efferin and Hartano (2015) and Senftlechner and Hiebl (2015) find that the MCS in place, in an Indonesian organization, is negotiated and produced based on common cultural grounds of the owner and key employees, and that it is a reflection of the national culture. These later two studies are especially interesting as they not only show how national culture dominates MCS, but also show the importance of the TMT in driving the organizational culture, i.e. the importance of upper echelon theory.

Related to the three different propositions by Berry et al. (2009), we show that culture does influence MCS, but in one of three ways where each can take precedence. Control in the form of MCS dominating culture is thus, through what Malmi and Brown (2008) label cultural controls, where individuals' values align with those of the organizational culture and, as such, represent internal culture influencing MCS. Control can also constitute culture, when the MCS shape the culture within the organization. Finally, culture dominating control is when national culture overrules or influences MCS in place in the organization and, as such, represents external culture influencing MCS. This may relate to why the findings on the influence of culture are so fragmented, as most studies only examine the influence of national culture and neglect to look at other aspects such as the cultural controls within the organizations studied.

This raises the issue of which aspects of culture matter for specific aspects of the MCS. Sulaiman et al. (2004) examine the use of contemporary management accounting practices in Singapore, Malaysia, India and China and find that the use of such tools is lacking in all four countries. All the countries examined primarily use traditional management accounting practices rather than contemporary ones such as ABC, target costing and the BSC, and Sulaiman et al. (2004) posits culture as one of the factors influencing this decision.

3.1.4. Budgeting as a prominent topic

One of the most prominent cybernetic controls is budgeting (Lueg and Lu, 2012, 2013; Malmi and Brown, 2008). Shields and Young (1993, p. 277) claim that participative budgeting may be *"an antecedent to reinforce a particular culture"*. Superiors and subordinates can communicate beliefs, values and goals through participative budgeting, and as such, it can be an effective way of transmitting and reinforcing a particular culture. This suggests that the influence of culture on participative budgeting may go both ways, so that participative budgeting may reinforce the cultural controls in place in the organization, but also that the national culture of individuals may affect the use of participative budgeting.

Participative budgeting is often used in performance evaluation (Brownell, 1982; Brownell and Hirst, 1986; Brownell and Dunk, 1991), where a three-way interaction between participation, emphasis and task uncertainty has been found to affect job related tension. The influence of national culture on these findings and whether the results can be transferred cross-culturally have been examined extensively (Frucot and Shearon, 1991; Harrison, 1992, 1993). The claim by Harrison (1992), that countries with high power distance and low individualism—as well as countries with low power distance and high individualism—will generate the same results for participation, as proposed by Brownell and Hirst (1986), is significant. More specifically, participation has the same effect on a low power distance/high individualism culture (Australia) as on a high power distance/low individualism culture (Singapore). The findings of Harrison are important as 47 of the 50 countries examined by Hofstede exhibit these combinations (Harrison, 1992, pp. 13), and because it shows the effect of national culture. Lau et al. (1995) support the findings in different industries. Lau et al. (1997), however, caution the use of the framework by Harrison (1992), as they find that managers perform better under high budget emphasis, regardless of the effect of individualism. Similarly, Lau and Buckland (2000) find the three-way interaction to hold in a Norwegian setting for levels of high participation. However, for low participation their results are inconclusive due to low participation not being very common in a Norwegian culture. France does not fit into the cultural dimensions framework by Harrison (1992), as there is high power distance and high individualism. Lau and Caby (2010) examine participative budgeting in France and find support for the three way interaction between budget participation, budget emphasis and task difficulty. However, they do find that the amount of participation is much lower than other studies, which they claim is due to a general low participation in French culture. Similar to Lau et al. (1997), they caution on relying too much on the framework by Harrison (1992), as they find the interaction effect despite the different cultural dimensions. Iriyadi and Gurd (1998) replicate the studies by Harrison (1992, 1993) in an Indonesian setting but do not find participation to influence the budgeting process, a result that differs from the findings of Harrison. Similarly, Otley and Pollanen (2000) replicate the studies of Brownell (1982), Brownell and Hirst, (1986), Dunk (1989), Brownell and Dunk (1991) as well as Harrison (1992) and find mixed results in all cases, though they do find that there is a three-way interaction.

O'Conner (1995) only looks at the dimension of power distance and finds that it moderates the usefulness of participation in budget setting and performance evaluation. Similarly, Stammerjohan et al. (2015) find that there is a correlation between participation and performance for both high and low-power distance samples, showing the effect of power distance on the three-way interaction.

Tsui (2001) takes a different approach and looks at the interaction effect of MCS and budget participation on managerial performance in an Asian versus a Western setting. Rather than choosing two different countries, she chooses Caucasian managers and Chinese managers in Hong Kong and focus on power distance, collectivism and long-term orientation. Chinese managers, exhibiting high levels of participation, experience negative performance as the Chinese feel that allowing subordinates to participate in budgeting would run counter to expectations of Chinese autocratic leadership styles. For the Caucasian managers, she finds that participation has a positive effect on performance.

Power distance has also been found to influence the level of budgetary slack (Lau and Eggleton, 2004). Low power distance is associated with high budget emphasis, combined with high information asymmetry. This leads to low propensity to create slack. However, if information asymmetry is low, propensity to create slack is high. Low budget emphasis and high information asymmetry are, similarly, likely to result in high slack. For high power distance, the result is similar for high budget emphasis. Yet, for low budget emphasis, the result differs with high information asymmetry. This leads to lower propensity to create slack.

The literature review by Dunk and Nouri (1998) looks at antecedents to budgetary slack, where three variables are relevant in relation to culture. If employees are risk-averse, they are more likely to create budgetary slack, which relates to the cultural dimension of uncertainty avoidance. Similarly, a highly ethical organizational culture is, similarly, likely to result in less slack, which may links to national culture. Curtis et al. (2012) show that power distance, country of origin, and gender influence ethical decision making. Finally, individuals with power within the organization are more likely to create budgetary slack. This relates to power distance. However, it is also relevant for upper echelon theory, as it shows how the TMT is able to shape aspects of MCS.

Yet, there are also studies on budgeting that claim that national culture has little or no influence on budgeting, with Goddard (1997b) finding that organizational culture has a bigger influence than national culture. Similarly, Goddard (1997a) claims that financial control systems have to be compatible with the organizational culture of the organization in order to be effective, highlighting the importance of cultural controls. O'Connor and Ekanayake (1998) highlight three reasons for differing results regarding cross-cultural studies on budgeting; the influence of multiple cultural dimensions, the level of analysis, and comparisons of means used to test hypotheses.

3.1.5. Activity management as a prominent topic

Activity management is the effective and consistent organization of a strategic business unit's activities in order to use its resources in the best possible way to achieve its objectives (Gosselin, 1997, pp. 106). It is synonymous with a cybernetic control.

Gosselin classifies activity management (AM) into three basic categories; activity analysis, activity cost analysis and activity-based costing (ABC). He finds that organizational structure plays an important role in the selection of the level of AM, where centralized top-down organizations prefer to adopt ABC, while organizations with a lower focus on a top-down approach prefer the other levels of AM. Similarly, behavioral and organizational factors often have a significant effect on the success of ABC implementation (Shields, 1995). Malmi (1997, p. 475) finds that *"…organisational culture…[is] worthy of consideration in explaining resistance to ABC, and ABC failure"*, which shows the importance of culture for AM.

Brewer (1998), who formulates six predictions that look at how international cultural diversity may affect ABC implementation, has examined ABC from a national cultural perspective by. He bases the predictions on the cultural dimension of Hofstede, and as such, they are highly relevant for the influence of national culture. Brewer tests prediction 1 and 3. Prediction 1 states that a high power distance culture will lead to less defensive behavior when implementing ABC, making implementation more successful. This supports his findings that ABC is more successful in the Malaysian plant, which he attributes to the top down approach taken, and the high level of power distance in Malaysia. Prediction 3 states that the cross-function team-based approach to work, inherent in ABC systems, will result in a more defensive behavior in individualist cultures, thereby reducing ABC success relative to collectivist cultures. His finding, that there is little resistance in Malaysia compared to the US, supports this. The study by Brewer is important as it links national culture with ABC and shows how culture can influence the use of ABC. By including behavioral attributes as intervening variables, Morakul and Wu (2001) extend Brewer's predictions. Their finding, that cultures with a high power distance will exhibit resistance to ABC due to a shift in empowerment and redistribution of power, is significant.

Baird et al. (2004, 2007) find that top management support and the link to quality initiatives are the two organizational factors that are associated with success, while the cultural factor of outcome orientation is associated with success for each level of AM. The findings on top management support also mirror the findings of Shields (1995) who claims that it is an important variable for successfully implementing ABC. In relation to upper echelon theory, it stresses the importance of top management support, echoing the findings of Fiss and Zajac (2004) and Burkert and Lueg, (2013), as they show that the TMT has the power to decide on the adoption as well as the customizing of management practices to personal characteristics and perceptions.

Zhang et al. (2015) look at organizational culture, structure, and its effect on the success of implementing ABC. They find that a formalized organizational structure and outcome orientation affect the success of ABC implementation, but that centralization does not matter. Liu and Pan (2007), similarly, find that top management support, as well as a top-down approach, are essential to the successful implementation of ABC in China. They resonate prediction 1 of Brewer, as China has a high power distance score and, as such, ABC should be easier to implement with a top-down approach.

3.2. Hybrid measurement systems: long range versus action planning

One of the most popular hybrid measurement systems is the Balanced Scorecard (BSC) (Jakobsen and Lueg, 2012, 2014; Lueg, 2015; Lueg and Nørreklit 2012). Carmona et al. (2011) find that subjects from an individualistic culture respond differently to the BSC than subjects from a collectivistic culture, with individualistic cultures putting more emphasis on the financial aspect of the BSC, and the collectivist cultures putting more emphasis on the long-term perspective. Similarly, Modell (2012) claims that the BSC represents an individualistic ideology, reflecting the managerial styles of the US. For planning, Chan (1998) finds that the dimension of long vs short-term orientation influences the negotiation outcomes of transfer prices and thus planning controls.

3.3. Reward and compensation

Several researchers have examined the influence of national culture on reward and compensation for both executives and employees. Chow et al. (2001) find that the dimensions of collectivism/individualism and power distance influence the acceptance of high stretch performance standards, with the Chinese more readily accepting imposed high stretch performance standards than US-nationals, and more readily accepting autocratic management. Based on a US and Taiwanese sample, Awasthi et al. (2001) find that the cultural dimensions of individualism/collectivism and power distance can modify employees' decisions and satisfaction with imposed performance evaluation and rewards aimed at modifying work-related behavior. They also find that US nationals have significantly lower satisfaction under imposed performance evaluation and reward structures, showing the influence of power distance but also individualism/collectivism on the reward and compensation aspect of MCS.

The study by Awasthi et al. (1998) shows the effect of national culture on performance measures. They find that the US subjects select more team-based performance measures when they perceive a higher level of task interdependence. This is because they are aware of their own and their teammates' individualistic tendencies and seek to compensate for them by restricting individualistic behavior. This finding is very important as it goes against the expectations based on the cultural dimension of individualism. It suggests that national culture matters, but can be negated through awareness. This study is very significant in relation to the discussion, undertaken in this paper, regarding how control can dominate culture in the form of cultural controls, as that is, essentially, what the participants chose in order to negate national culture. The study is further of importance to upper echelon theory, as the sample in this study consists of MBA students: Burkert and Lueg (2013) have previously shown that individuals with a business oriented educational background have a positive impact on the level of TMT value-based management sophistication.

Chow et al (1998) find that the dimensions of collectivism and uncertainty avoidance influence the upward communication of private information under different pay schemes. In the absence of face-to-face interaction, individuals from collectivist/high uncertainty avoidance cultures will make smaller misrepresentations than will individuals from high individualism/low uncertainty cultures.

Harrison et al. (1999) look at a cross-cultural investigation of managers' project evaluation decisions in a US and Taiwanese setting. They find that when the participants have private information and the potential for personal gain, both US and Chinese subjects are inclined to continue with an unprofitable project, though the Chinese are less inclined. These findings reflect the cultural dimensions of individualism/collectivism and the long/short term orientation accounting for the differences. Similarly, Salter and Sharp (2001) find that a small difference in individualism matters, as the Americans in their study were more likely to escalate commitment than the Canadians were. This is because the rewards for managers for continuing the project were substantially larger than if it was discontinued.

3.4. Administrative controls

Administrative controls are synonymous with policies and procedures. National culture has an influence on administrative controls. Harrison et al. (1994) examine the influence of national culture on organizational design and planning controls. For the US and Australia, organizational design has a greater emphasis on decentralization, responsibility centers, and quantitative and analytical techniques in planning and control. This reflects individualism, low power distance and a short-term orientation. For Singapore and Hong Kong, there is a greater emphasis on long-term planning and on group-centered decision making. This reflects collectivism, high-power distance and a long-term orientation. These conditions imply greater managerial discretion for the US and Australia, and as such, upper echelon theory would have greater impact on the culture within these organizations.

4. CONCLUDING DISCUSSION

Figure 1 categorizes our main findings on the most relevant of the 99 identified studies. This categorization corresponds to the two perspectives of national culture (incl. upper echelons) and selected MCS.

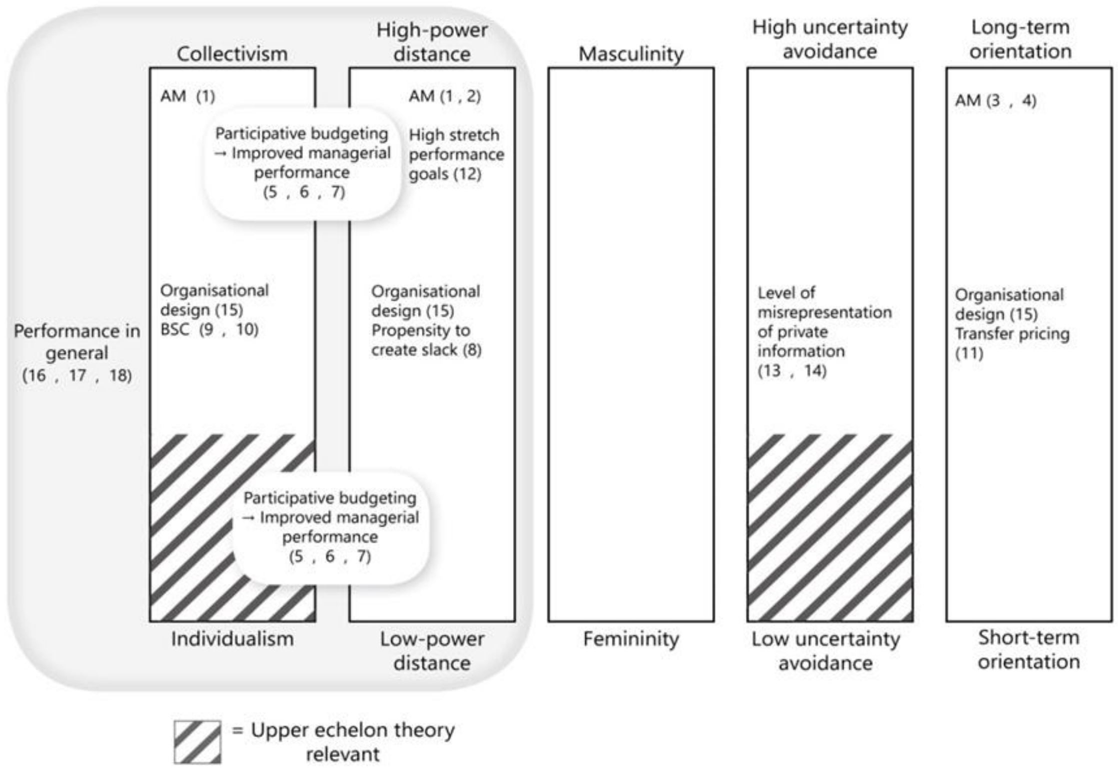
4.1. Contributions to theory

This paper addresses culture from a broad perspective by combining internal aspects (organizational culture and upper echelon theory) with the external aspect (national culture), responding to the restricted definition of culture in many empirical studies that primarily deal with *national* culture. At the existing state of knowledge on MCS and culture, *"…it proves almost impossible to generalize about even the major effect of (national) culture on MCS design and use"*, and it *"is likely that organisational culture will also have a significant influence on attitudes and behaviour within an organisation"* (Otley, 2016, p. 51).

Our review of the empirical literature merely suggests that culture dominates MCS, but not in the exact same way that Berry et al. (2009) conjecture. Rather, there is a tendency of culture dominating control in situations where national culture influences the MCS. Similarly, controls dominate culture in situations where organizational aspects of culture influences the MCS-such as the cultural controls proposed by Malmi and Brown (2008) and upper echelon theory. As such, this review demonstrates that taking a more holistic approach to culture will be beneficial, as the dimensions of national culture interact with upper echelon theory as well as organizational culture. As such, it corresponds to what Harrison and McKinnon (1999) suggest, namely that *"…we may have reached another turning point at which we must reconsider the way in which we approach culture in MCS research"* (pp. 502).

There is an ongoing debate about whether MCS should be seen as a package or whether the separate parts can be examined separately (Malmi and Brown, 2008; Ferreira and Otley, 2009; Grabner and Moers, 2013). This paper contributes to this discussion as it shows how the elements of the MCS link through culture, and as such, must be seen as a package.

Figure 1. Interaction of selected MCS with national culture and upper echelon theory



	Activity Management more likely to be succesful:	
1	Brewer	1998
2	Liu and Pan	2007
3	Baird et al	2004, 2007
4	Zhang et al	2015
	Participative budgeting more likely to be succesful:	
5	Harrison	1992
6	Brownell and Dunk	1991
7	Lau et al	1995
	Dimension affecting level of budgetary slack:	
8	Lau and Eggleton	2004
	Dimension influencing the balanced Scorecard:	
9	Carmona et al	2011
10	Modell	2012
	Dimension influencing transfer pricing:	
11	Chan	1998
	Acceptance of high-stretch performance goals more likely to be succesful:	
12	Chow et al	2001
	Dimension influencing the level of misrepresentation of private information:	
13	Chow et al	1998
14	Harrison et al	1999
	Dimensions influencing organisational design and planning:	
15	Harrison et al	1994
	Dimensions influencing performance in general:	
16	Awasthi et al	2001
17	Awasthi et al	1998
18	Salter and Sharp	2001

4.2. Contributions to practice

Practitioners need to be aware of how culture might influence MCS, as they need to take into consideration the aspects of national culture and upper echelon theory. National culture influences preferences and implementation of AM, the BSC, organizational design, participative budgeting and budgetary slack. Practitioners must also keep in mind that upper echelon theory is more likely to be relevant under conditions of high individualism and low uncertainty avoidance. It is important that the cultural controls in place in the organization can negate other influences of culture though practices such as the hiring process (e.g. Soeters and Schreuder, 1988), which may be a useful way to avoid friction with different aspects of culture.

4.3. Limitations

This review is subject to several limitations. First, we limit ourselves to journals found in the ABS guide, which has been subject to some criticism (Tourish and Willmott, 2015). Second, this review focuses only on MCS and disregards other aspects of accounting. Future research could investigate how culture interacts with other accounting practices, such as intellectual capital (Lueg et al., 2012), CSR and sustainability (Lueg et al. 2015) or integrated reporting (Lueg et al., 2015; Velte und Stawinoga, 2016).

4.4. Future research

Several opportunities for future research arise from this literature review. First, little research has been done on which of the cultural dimensions of Hofstede influence the managerial discretion managers have. There is support for individualism and low uncertainty avoidance having an effect. However, the other dimensions need further examination, as well. Crossland and Hambrick (2011) find that power distance does not have an influence, but this should be tested further, as it has been shown that managerial support is often of importance when implementing various MCS, and power distance may have an influence on this level of support. Second, future studies should also consider including qualitative methods as well as more TMT-characteristics. The influence of masculinity/femininity on the TMT should be examined as it has been found that male CEOs and CFOs are more risk seeking than their female counterparts (Huang and Kisgen, 2013). However, future studies utilizing Hofstede must include all the cultural dimensions. Third, another viable option for future research is an investigation of the interaction between the long/short term orientation and long-range/action planning according to the Malmi and Brown (2008) framework. Wang and Hunton (2011) have examined the effect of the cultural time orientation on the interaction between the budget horizon and employees satisfaction with participative budgeting. They find that the two must be congruent. Since their article has been retracted, it provides an excellent starting point for future research. Fourth, the propositions by Brewer (1998), on how international cultural diversity may affect implementation of AM, have been given relatively little attention, which should be addressed in future research. In addition, the link between the TMT and the implementation of AM would be a viable addition to the propositions. Fifth, for participative budgeting, the three-way interaction between budget emphasis, participation and task uncertainty affecting job-related tension is a viable topic for further research as there is agreement on the interaction effect, but disagreement on how they relate (Otley and Pollanen, 2000). Sixth, the few studies encountered on family businesses could indicate that the owners shape the culture of the organization, and that this often overrules formal MCS. There may be a viable research opportunity to link this with upper echelon theory to examine whether the MCS of family businesses reflect top manager characteristics. Researchers may turn to the review of MCS in family businesses by Senftlechner and Hiebl (2015) for inspiration. Seventh, external consultants also shape MCS through advisory. This review has excluded this external type of organizational culture but it constitutes an interesting branch of research (Canato and Giangreco, 2012; Lueg 2009, 2010). Eighth, some studies have developed constructs for culture that are supposedly created through MCS, such as a value-based culture (Homburg and Pflesser; Lueg 2008). Future research could look into the cause-and-effect of the MCS and these specific cultures. Ninth, the primary focus in this review has been on two of the predictions by Berry et al. (2009). We have only given limited attention to the second proposition, which states that control is equal to culture. Recent papers such as the one by Mikes and Morhart (2016) as well as the editorial by Jeacle and Miller (2016) find that MCS shape popular culture and may fall under this proposition, and as such, this area would make for an interesting future research topic.

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THE INFLUENCE OF ROYAL BOARD OF DIRECTORS AND OTHER BOARD CHARACTERISTICS ON CORPORATE RISK DISCLOSURE PRACTICES

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Abstract

This study focuses on Saudi's unique social and cultural context and its impact on board attributes and corporate risk disclosure (CRD) by addressing the relationship between royal family members on the board and CRD. Using content analysis of a sample of 307 company-year observations over the period of 2008-2011, the results from the descriptive statistics show a moderate level of CRD practices among firms. The initial and additional results from the panel data analysis show that board characteristics, namely, board size, board independence, royal family members on the board, and meeting frequency of the board of directors are important determinants of CRD in Saudi Arabia. The positive influence of royal family members on CRD in this study contradicts the classic negative relationship between family members on the board and disclosure, which indicates that not all types of families' members on the board have the same motivation towards corporate disclosure.

Keywords: Corporate Risk Disclosure, Board Characteristics, Annual Reports, Saudi Arabia
JEL Classification: G32, M14, M48
DOI: 10.22495/cocv14i2c2p6

Acknowledgments

The authors would like to thank The Ministry of Higher Education and Aden University, Republic of Yemen, for the financial support extended to the first author.

1. INTRODUCTION

The emphasis on the importance of corporate annual reports content came about as a result of many factors. These include the increase of international trades through multinational companies, the internationalisation of capital markets, the transition from socialist centrally planned economies to free market economies, as well the growing need for companies to attract foreign investments. Rapid changes in business environment have further compelled companies to rely on financial instruments and international transactions, hence raising the issue on the importance of risk reporting (Dobler, 2008). When major accounting scandals and corporate collapses occurred in the early 2000s (e.g., Maxwell, Equitable Life, Enron, WorldCom, AIG, Lehman Brothers, Madoff) and the global financial crisis erupted in 2008-2009, it shook the confidence of investors and regulatory bodies, which consequently led to the increased attention of risk disclosure and risk management practices (Cole and Jones, 2005; Kirkpatrick, 2009). The stakeholders' reactions to these challenges are to enhance transparency, reduce information asymmetries by improving disclosure quality, and a focus on the importance of corporate risk reporting.

Much of risk reporting studies have been conducted in developed countries such as the U.S, the U.K, Germany, Italy, Canada, Australia and Japan (Lajili and Zeghal, 2005; Linsley and Shrives, 2006; Berger and Gleißner, 2006; Abraham and Cox, 2007; Konishi and Ali, 2007; Fang, 2010; Zhang et al., 2013; Maffei et al., 2014). In contrast, little is known about Corporate Risk Disclosure (CRD) in developing countries (e.g., Amran et al., 2009; Adamu, 2013; Ntim et al., 2013), particularly in Arab countries (Hassan, 2009, 2014; Mousa and Elamir, 2013; Al-Shammari, 2014; Abdallah et al., 2015). To the best of our knowledge, no study has yet investigated into CRD practices and its determinants in Saudi Arabia. It is therefore the focus of this study to explore the level and nature of CRD, and the impact of board characteristics on CRD in the Kingdom of Saudi Arabia.

The focus of this study is on Saudi Arabia due to its unique socio-economic setting. First, in terms of its economy, Saudi Arabia is ranked as one of the largest capital markets in the world for its market capitalisation where it adopts an open economic philosophy based on market economy and the liberalisation of trade (AMF, 2014). Second, the Saudi government has initiated several far-reaching reforms at the Saudi Stock Exchange to mobilise savings and attract foreign capital investment. These actions include the privatisation of state-owned companies, and allowing foreign investors to own shares in Saudi listed companies. Third, compared to other countries with advanced capital markets, the accountancy profession in Saudi Arabia is still lagging behind in terms of offering professional certificates. Lastly, the Saudi regulatory framework includes various legislations that require the Saudi listed companies to provide informative risk-related disclosures in their annual reports. These factors make the investigation of CRD practices an important issue in Saudi Arabia.

This study contributes to the existing literature in several ways. First, it provides a starting point for further research on CRD practices in Saudi Arabia's non-financial listed companies. Second, the current study contributes to risk reporting and corporate governance literature, in general, and board characteristics, in particular; through a theoretical and empirical investigation on the impact of board characteristics, such as board independence, size, meeting frequency, and executive directors on the board on CRD in a developing country such as Saudi Arabia. Furthermore, this study investigates the extent of influence of Saudi royal family members on the board as a potential determinant of CRD; a factor that has not yet been investigated in prior research. The results of this study are applicable to other emerging capital markets, especially the GCC and Arab countries which have similar social, economic, and institutional characteristics. This may assist the national and international standard-setters and policy makers in improving corporate governance and risk reporting.

The paper is organised as follows: section two is an overview of the Saudi institutional context, section three is the literature review and hypotheses development, and section four is the research methodology. Section five is a discussion on the empirical findings. The last section presents the conclusion, limitations and future research.

2. AN OVERVIEW OF THE SAUDI INSTITUTIONAL CONTEXT

2.1. Corporate Governance and Corporate Risk Disclosure in Saudi Arabia

Financial accounting practices in Saudi Arabia are governed by the Saudi government. Under the government, along with related agencies, many laws and regulations were introduced in their attempt at improving accounting provision and creating an appropriate regulatory environment that protect investors and meet the information needs of users of financial reporting. The three main bodies that regulate corporate disclosure and governance in Saudi Arabia are The Saudi Accounting Association (SAA), Saudi Organization for Certified Public Accountants (SOCPA) and Capital Market Authority (CML).

The Saudi Accounting Association (SAA) was established in 1981 to improve the accounting profession. Under SAA, the first accounting standard in Saudi Arabia, known as 'General Presentation and Disclosure Standard' was issued in 1985. This standard became the main source to govern the preparation of financial statements, and the information contained which includes risk-related information. It specifies how to handle the changes in accounting policies, and the potential gains and losses. It also determines the disclosure requirements on the nature of the company's activities, accounting policies, changes in accounting estimates, financial commitments, collateral, and the subsequent events for the preparation of financial statements.

The Saudi Organization for Certified Public Accountants (SOCPA) was established under Article No. 19 of Chartered Accountants Law (CAL). The objectives of SOCPA are to promote and improve the accounting and auditing profession including issuing, reviewing, and developing accounting and auditing standards. As of February 2015, there were 21 Saudi Accounting Standards (SASs), 20 of which were issued by SOCPA, and all of which, with the exception of the Zakat and Income Tax Standard, were based on the International Accounting Standards (IASs), USA Generally Accepted Accounting Principles (GAAP), and UK Accounting Standards. Within the Saudi Accounting Standards, some standards, such as foreign currency, investment in securities, segmental reports, and accounting for the decline in the value of non-current assets standards, contain certain provisions to regulate risk reporting in Saudi listed companies.

The third main body is the Capital Market Authority (CMA) which was established in 2003 under the Capital Market Law (CML). The main objectives are to create an appropriate investment environment, enhance confidence, and reinforce transparency and disclosure standards in listed companies, as well as to protect the investors and dealers from illegal acts in the market (CMA, 2015). In order to raise the level of transparency, the CMA has issued a number of implementing regulations to apply the provisions of the CML. Among the most important of these implementing regulations are the Listing Rules and Corporate Governance Regulations. The Listing Rules (LR), issued by the CMA in 2004, is aimed at improving transparency and protecting shareholders' rights by regulating the public offering, registration and admission to the listing of securities in the Saudi capital market. These rules require, for example, a description of the significant plans and decisions of the issuer; the future prospects of the issuer's business and any risks facing the issuer; a geographical analysis of the issuer's gross revenues and its subsidiaries; the reservations of the external auditor on the financial statements; a declaration that the internal control system has been prepared on a sound footing and has been effectively implemented; and that there are no significant doubts about the ability of the issuer to continue as an ongoing concern.

In Saudi Arabia, the latest evolution in corporate governance is embodied by the issuance of the Saudi Corporate Governance Regulations (SCGRs) in 2006 by the CMA (CMA, 2006). The issuance of SCGRs reflects the CMA's commitment towards the development of the financial market in light of the growing international attention given towards the principles of corporate governance as the most important mechanism to raise market efficiency and increase transparency and the attractiveness of the traded securities. The SCGRs impose disclosure and transparency requirements beyond those required by previous laws, standards, and regulations. For example, the board of directors must ensure integrity in the procedures related to preparing financial reports, appropriate control procedures for risk management are implemented by predicting possible risks and disclosing them with transparency, and to make annual review of the effectiveness of the internal control systems. In this regard, the board members composition and characteristics are important to SCGRs as an element of best practice of corporate governance and transparency; SCGR requires that a majority of the board members are non-executive members, and that the independent members of the board should not be less than two members, or one-third of the members, whichever is greater.

2.2. The Social and Cultural Context of Saudi Arabia

It is argued that corporate governance is strongly affected by the social and institutional environment contexts within a country (see Wanyama et al., 2009; Adams et al., 2010; Aguilera and Jackson, 2010; Alamri, 2014). The Saudi society is built on a strong structure of tribal system who determines the power and influence of key government polices (Helms, 1981). Saudi Arabia is an absolute monarchy and the country has been ruled by the Saudi dynasty since 1932 (Hain, 2011). Being the most powerful and influential family in the Saudi society, the Saudi royal family have high social status and royal authority (Alamri, 2014). To ensure policies that impact the social and economic structure of the nation are implemented, the Saudi government relies on the royal authority as well as the social and tribal relations.

In business, the government strives to create an attractive investment environment by enhancing governance and transparency in the Saudi capital market. To achieve this, the government is keen on having representatives on the companies' boards who invests and utilises their social and tribal networks that would ensure a sound implementation of governance and transparency. Hence, the Saudi government capitalises on their strong relationship with the royal family members who are on the companies' boards and other royal members from outside the board who invest in the financial market. As a result, royal family members on the board of directors are more powerful than other family members on the board with regards to influencing management behaviour and actions because they have tribal relationships and usually share leadership and political power with the Saudi ruling family. Thus, it is most likely that companies and shareholders would invite highly regarded members, (such as the princes and other royal family members) to join the board as the chairmen or board members in order to benefit from their power and prestige. In a study by Alamri (2014), a company board secretary stated in this regard:

"The board of directors in our company is composed of many individuals, one of whom is a member of the royal family, who would be better to nominate as the chairman? We need someone to add to the company's image and to represent us positively in the eyes of the public".

With such close family, tribal and political ties with the Saudi government, the royal family members on the board are more likely to exert their power and prestige in the boardroom to convince other board members to support government plans and regulations, notably those related to transparency and disclosure. This is achieved by forcing the company management to comply with such requirements and to respond to the users' needs of information.

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Prior risk literature has mostly focused on firm-specific characteristics as determinants of CRD (Linsley and Shrives, 2006; Konishi and Ali, 2007; Hassan, 2009; Amran et al., 2009; Rajab and Handley-Schachler, 2009; Oliveira et al., 2011; Mousa and Elamir, 2013; Al-Shammari, 2014; Baroma, 2014; Abdallah et al., 2015). However, less attention has been paid to corporate governance mechanisms (see Abraham and Cox, 2007; Ismail and Rahman, 2011; Ntim et al., 2013; Zhang et al., 2013; Mokhtar and Mellett, 2013; Barakat and Hussainey, 2013; Elshandidy et al., 2013), and board characteristics (e.g. Elzahar and Hussainey, 2012; Dominguez and Gamez, 2014; Elshandidy and Neri, 2015). The current study draws from this literature and the Saudi corporate setting in order to identify possible determinants of CRD. This study specifically investigates the impact of board characteristics (i.e., board size, board independence, executive directors on the board, royal family members on the board, and board meeting frequency) on CRD in Saudi's non-financial companies.

3.1. Board Size

Prior literature has identified two main aspects related to the effect of board size (Cerbioni and Parbonetti, 2007); the board's ability to mitigate agency costs and the problem of communication and coordination (Jensen, 1993; Yermack, 1996). Lipton and Lorsch (1992), Jensen (1993), Yoshikawa and Phan (2003), and Florackis and Ozkan (2006) indicate that oversized boards could worsen agency problems. Large number of board members can lead to dispersal of the power in the boardroom, and thus adversely affect the effective coordination, communication, cohesiveness, and decision-making, and are more likely to be controlled by the CEO as the dominant figure (Zahra, et al., 2000). Moreover, Jensen (1993) adds that when boards have more than seven or eight members, they are less likely to function effectively and are more prone (compared to smaller board) to courtesy, favouritism and politeness at the expense of truth and frankness in the boardroom, so it is easier for the CEO to control the board.

The empirical evidence also provides mixed results. For instance, Akhtaruddin et al. (2009) report a positive relationship between board size and voluntary disclosures of 110 Malaysian listed companies. Similarly, Allegrini and Greco (2013) provide evidence from Italian listed companies that higher level of voluntary disclosure is related to companies with larger boards. Furthermore, Elzahar and Hussainey (2012), Ntim et al. (2013), and Elshandidy et al. (2013) document a positive association between board size and CRD in South Africa and the UK, respectively.

Recently, Dominguez and Gamez (2014) found that board size is negatively related to voluntary risk disclosure, and positively related to compulsory risk disclosure of the largest Spanish companies. However, other studies find no relationship between board size and disclosure (e.g. Arcay and Zquez, 2005; Cheng and Courtenay, 2006; Matoussi and Chakroun, 2008; Khodadadi et al., 2010; Buckby et al., 2015).

In Saudi Arabia, the evidence indicates that Saudi companies' boards are oversized (Al-Abbas, 2009; Albassam, 2014; Al-Janadi et al., 2013) as the average number of board members exceeds eight directors (Jensen, 1993; Lipton and Lorsch, 1992). Furthermore, the appointment of board members is affected by the tribal and social factors and usually reflects the controlling shareholders' preferences who hire their relatives and friends. This means that such boards are more likely to be affected by courtesy, favouritism and politeness at the expense of truth and frankness in the boardroom, which make it less effective and easier to be controlled by the CEO or any other controlling group. Accordingly, a negative impact of board size on CRD can be hypothesised as follows:

H1. There is a negative relationship between board size and CRD.

3.2. Independent Directors on the Board of Directors

As long as the corporate disclosure policy emanates from the company board (Gul and Leung, 2004), and the annual reports are prepared under the supervision of the board of directors (Abraham and Cox, 2007), having effective and efficient boards is a crucial tool to alleviate any agency problems while enhancing corporate disclosure. Therefore, agency theory suggests that boards dominated by independent and outside directors are more effective in monitoring management behaviour and executive directors' decisions.

Chen and Jaggi (2000) point out those independent directors would be able to exert greater influence on management decisions to disclose comprehensive information as their proportion on corporate boards is higher. Rahman and Ali (2006) add that independent directors on the board of directors are important in ensuring greater monitoring functions. The rationale for this view is that independent directors are viewed as a key indicator of corporate governance quality, as they are, at least, in theory, independent of corporate management, and free from any business or other relationship that could materially interfere with the exercising of their independent judgement (Abraham and Cox, 2007). A higher proportion of independent directors on the board is expected to provide more risk-related disclosures to attract cheaper capital, expand customer base, and retain reputation and legitimacy (Barakat and Hussainey, 2013; Ntim et al., 2013).

Empirically, the findings regarding the relationship between independent directors and CRD are inconsistent. For instance, Abraham and Cox (2007), Ntim et al. (2013), Elshandidy et al. (2013), and Barakat and Hussainey (2013) find that independent non-executive directors on the board are positively associated with the level of CRD. On the other hand, Lopes and Rodrigues (2007), Elzahar and Hussainey (2012), Elshandidy and Neri, 2015, and Buckby et al. (2015) report an insignificant relationship between the two variables.

In the Saudi context, the SCGRs emphasise the important role of board independence as a vital tool to protect the interests of shareholders and enhance transparency. Thus, any Saudi company boards with more independent members are more likely to disclose more risk-related information. Hence, the following can be hypothesised:

H2. The proportion of independent directors on the board of directors is positively associated with CRD.

3.3. Executive Directors on the Board

There is a dearth of research on the role of executive directors on corporate disclosure, particularly on CRD. The nature and direction of the association between executive directors on the board and corporate disclosure can be explained and interpreted by a number of disclosure theories. Agency theory links the prevalence of executive directors (as an integral part of management) on the board with greater agency problems and less disclosure (Abraham and Cox, 2007). Based on this theory, managers have the ability and desire to maximise their own benefits at the expense of the owners and potential investors. Therefore, they deliberately hide some valuable information, including risk-related information, to prevent outsiders from exerting strict control on management and making rational decisions.

Mak and Li (2001) indicate that executive directors as shareholders are negatively related to the board monitoring over management activities, which, in turn, leads to a reduction in the quality and quantity of disclosure. In contrast, Abraham and Cox (2007) find a positive relationship between executive directors and the level of corporate risk reporting. This could be because of the pressure exerted by independent directors on experienced executives to reveal their relative expertise regarding risks surrounding the company. Following agency theory perspective, it can be hypothesised that:

H3. The proportion of executive directors on the board is negatively related to CRD.

3.4. Royal Family Members on the Board of Directors

The country's social and institutional contexts are key determinants of the quality of governance and disclosure practices (Wanyama et al., 2009; Adams et al., 2010; Aguilera and Jackson, 2010; Alamri, 2014). Saudi Arabia is country made up of a society whose strong tribal system governs key economic policies (Helms, 1981; Alamri, 2014). The Saudi ruling family is the most powerful and influential family in the Saudi society; they are a dynasty that possesses royal authority (Khoury and Kostiner, 1990; Alamri, 2014). The Saudi government, represented by the Saudi ruling family, pay great attention to protect and enhance the nation's rights and to achieve economic welfare. This is evident through its considerable efforts aimed at creating an attractive business environment by regulating and promoting corporate governance and transparency practices in the Saudi financial market. In addition to the enforcement power of laws and regulations, the

Saudi government relies on its strong social and tribal communication with other royal family members on companies' boards in order to ensure best practices of governance and high disclosure quality. Because the government share leadership and political power with the Saudi ruling family, the royal family members on the board of directors are more powerful and are more influential than other family members with regards to monitoring top management actions and protecting the shareholders rights. They are also more likely to exert their power and prestige in the boardroom by convincing other board members to enforce the company management to adopt best governance and high transparency.

It can be argued that the royal family members' presence on the board may enhance the board diversity which may improve board effectiveness (Elzahar and Hussainey, 2012), link the company with its external environment and critical resources (Oliveira et al., 2011), and improve the company's reputation and legitimacy (Ntim et al., 2013). Nevertheless, evidence indicates that there are dissenting views to the presence of the royal family members in the companies' boards which materially affect the selection of board members and the evaluation of board independence and quality (Alamri, 2014). Thus, royal family members could exercise strict control on management and rely more on disclosure, especially risk-related information. The influence that the royal family has on monitoring and disclosure depends on the number of royal family members on the board of directors; the higher the number of royal family members on companies' boards, the higher the chance of CRD being an indicator of disclosure quality. Thus, it can be hypothesised that:

H4. There is a positive association between the percentage of royal family members on the board of directors and CRD.

3.5. Board Meeting Frequency

Board meetings are the most common occasions for discussions and exchanging of ideas, monitoring managers and discussing other board duties (Andres et al., 2005). Lipton and Lorsch (1992), Conger et al. (1998), and Vafeas (1999) emphasise both the important role of board meetings and the time allocated that improve board effectiveness. They suggest that boards that meet more frequently are more likely to perform their duties diligently and effectively in accordance with shareholders' interests.

Allegrini and Greco (2013) argue that diligent boards, measured by board and audit committee meeting frequency, may provide a better working environment among executive and non-executive directors by sharing information that would focus on board-level oversight of financial reporting process. Moreover, Vafeas (1999) argues that board activity, measured by the frequency of board meetings, is an important dimension of board operations. Vafeas (1999) adds that if higher board activity facilitates better board monitoring, outside directors are likely to demand more board meetings to enhance their ability to monitor management.

Empirical evidence supports this theoretical argument. Laksmana (2008) finds a positive relationship between meeting frequency of the board of directors and the disclosure of the executive compensation practices. Kent and Stewart (2008) find that the quantity of disclosure is positively related to the frequency of board meetings. Similarly, Allegrini and Greco (2013) find that board meeting frequency is positively related to voluntary disclosure. Boards that meet more frequently are likely to be more informed about the company's activities and its managers performance, which positively affects the monitoring quality, and ultimately, greater disclosure including risk-related information.

Despite the SCGRs require boards to allocate ample time to perform their responsibilities, they do not identify a minimum number of meetings that should be held yearly. Therefore, this study aims to examine whether CRD is affected by board meeting frequency. Thus, a hypothesis can be formulated as follows:

H5. There is a positive relationship between board meeting frequency and CRD.

3.6. Control Variables

This study controlled for firm-specific characteristics (i.e., firm size and leveraged) as prior evidence indicates their impact on CRD (Taylor et al., 2008; Ismail and Rahman, 2011; Barakat and Hussainey, 2013; Ntim et al., 2013; Elshandidy et al., 2013; Dominguez and Gamez, 2014; Elshandidy and Neri, 2015).

4. RESEARCH METHODOLOGY

4.1. Sample and Data Collection

The initial sample of this study consists of all non-financial companies listed on the Saudi Stock Exchange (Tadawul) over a four year period, beginning from 2008 until 2011. This period is chosen for two reasons: first, 2008 is the second year of SCGRs application; thus if other fiscal year before 2008 is selected instead, there might be a significant reduction in the sample size due to the unavailability of data on variables. The second reason is that the year 2011 is the most recent year at the time of carrying out this study. Financial companies (109) are excluded in the sample due to distinctive regulations and different disclosure frameworks applied (Beretta and Bozzolan, 2004; Linsley and Shrives, 2006; Abraham and Cox, 2007; Ntim et al., 2013; Mokhtar and Mellett, 2013; Elshandidy and Neri, 2015). The final sample is made up of 307 non-financial company-Observations, which exclude observations with incomplete data.

Annual reports are chosen in the study because they are considered the main source of reliable information for investors and other interested parties (e.g., Beattie et al., 2004; Donnelly and Mulcahy, 2008; Ntim et al., 2013; Elshandidy and Neri, 2015). Data on board characteristics and firm-specific characteristics were derived from the companies' annual reports downloaded from the Saudi Stock Exchange (Tadawul) website or directly from the web page of each listed company.

4.2. Measurement of Corporate Risk Disclosure (CRD)

Content analysis is used to analyse and measure CRD (e.g., Linsley and Shrives, 2006; Rajab and Handley-Schachler, 2009; Mokhtar and Mellett, 2013; Zhang et al., 2013; Elshandidy and Neri, 2015; Abdallah et al., 2015). 'Sentence' is used as a unit of analysis to code risk-related disclosures as it is more likely to provide complete, reliable and meaningful data for further analysis (Milne and Adler, 1999).

In order to identify, classify and code risk-related sentences, this study adopts the broad risk disclosure definition of Linsley and Shrives (2006, p.402).

"Sentences are to be coded as risk disclosures if the reader is informed of any opportunity or prospect or of any hazard, danger, harm, threat or exposure that has already impacted upon the company or may impact upon the company in the future or of the management of any such opportunity, prospect, hazard, harm, threat or exposure".

For the purpose of this study, a risk disclosure model is developed solely for identifying and measuring CRD in Saudi non-financial listed companies. The model is taking into account the Saudi regulatory environment in which the sample companies operates, including laws, standards, and governance regulations. This model is classified into seven categories (general risk-related information, accounting policies, financial instruments, derivatives hedging, segmental information, operational risk, and financial risk) and 60 risk-related items that expected to be disclosed in the company's annual reports. The analysis of risk-related disclosures involves all sections of the company's annual reports (see Beattie et al., 2004).

4.3. Measurement of Independent and Control Variables

In this study, the independent variables are board size, board independence, executive directors on the board, royal family members on the board, and board meeting frequency. The study also controlled for firm-specific characteristics (firm size and leveraged) based on the previous research. Table 1 summarises the definitions of all variables used in this study.

Table 1. Summary of definitions and operationalisation of variables

Variable	***Measurement***
Dependent variables	
Corporate risk disclosure (*CRD*)	Natural log of the total number of risk-relate d sentences.
Independent variables	
Board Size (*BS*)	Number of directors on the board of directors
Independent Directors on the Board (*InDs*)	Natural log of the proportion of independent directors on the board
Executive Directors on the Board (*ExD*)	Proportion of executive directors on the board
Royal Family Members on the Board (*RoyFMem*)	Natural log of the proportion of the number of royal family members on the board of directors
Meeting Frequency of the Board (*BM*)	Natural log of the number of meetings held by the board of directors per year
Control variables	
Firm Size *(FSize)*	Natural log of total assets
Leverage *(Lev)*	Ratio of total debt to total assets

4.4. Research Design

Endogeneity is a concern when it comes to examining the influence of corporate governance on CRD (Ntim et al., 2013; Elshandidy and Neri, 2015). However, endogeneity can be controlled by using fixed effects models (e.g., Yermack, 1996; Wintoki, 2007; Guest, 2009; Brown et al., 2011). Given the panel nature of the data, this study employs unbalanced panel data analysis. The results of the Hausman test (Hausman, 1978) suggest the use of the fixed effects over random effects. Thus, the firm fixed effects regression model for CRD is as follows:

$$CRD_{it} = \beta_0 + \beta_1 \text{ BSIZE}_{it} + \beta_2 \text{ INDS}_{it} + \beta_3 \text{ EDS}_{it} + \beta_4 \text{ ROYMEM}_{it} + \beta_5 \text{ BM}_{it} + \beta_6 \text{ FSIZE}_{it} + \beta_7 \text{ LEV}_{it} + \varepsilon_{it} \quad (1)$$

Where:
CRD: Corporate risk disclosure;
BSIZEB: Board size;
INDS: Independent directors on the board;
EDS: Executive directors on the board;
ROYMEM: Royal family members on the board of directors;
BM: Frequency of board meetings;
FSIZE: Firm size;
LEV: Leverage;
ε: Error term.

Prior to analysis, the main assumptions of multiple regression (i.e., outliers, normality, linearity, multicollinearity, heteroscedasticity, and autocorrelation) have been checked, and then corrected or controlled. Multicollinearity is checked using Pearson correlation matrix and Variance inflation factor (VIF). As shown in Tables 2 and 3, the results indicate no severe multicollinearity problem. This study employs fixed effects regression model clustered at the firm level as it produces a robust estimator to cross-sectional heteroscedasticity and within-panel correlation (Rogers, 1993).

Table 2. Pearson correlation matrix

	CRD	*Bsize*	*InDs*	*Eds*	*RoyMem*	*BM*	*FSize*	*Lev*
CRD	1							
BSize	0.342**	1						
InDs	-0.211**	-0.090	1					
EDs	0.028	-0.004	-0.271**	1				
RoyMem	0.103*	0.020	0.046	0.014	1			
BM	0.215**	0.040	-0.045	-0.199**	0.027	1		
FSize	0.481**	0.376**	-0.281	-0.113*	0.023	0.178**	1	
Lev	0.357**	0.56	-0.156**	0.014	0.032	0.019	0.491**	1

***,* Correlation is significant at the 0.01 and 0.05 level, respectively*

The dependent variable CRD is the logarithm of the total number of risk-related sentences. The independent variables are: BSize is the number of directors on the board of directors; InDs is the logarithm of the proportion of independent directors on the board; EDs is the proportion of executive directors on the board; RoyMem is the square root of the number of royal family members on the board; BM is the logarithm of the number of board meetings per year. The control variables are: FSize is the logarithm of company total assets; Lev is the rate of total liabilities divided by total assets

Furthermore, the VIF test, as shown in Table 3, confirm the absence of multicollinearity problem because the highest value (1.78) is far less than the threshold value of VIF (10) (Hair et al., 2010).

Table 3. Results of VIF and tolerance tests

Variable	*VIF*	*1/VIF*
FSize	1.78	0.562
Lev	1.37	0.730
InDs	1.22	0.821
BSize	1.20	0.833
EDs	1.18	0.848
BM	1.08	0.927
RoyMem	1.01	0.993
Mean VIF	1.26	

5. EMPIRICAL RESULTS AND DISCUSSION

5.1. Descriptive Statistics

Table 4 summarises the descriptive statistics of the variables included in the regression model. The results indicate significant variations among some variables' scores as shown by the minimum, maximum and standard deviation values. CRD varies largely among companies and ranges from a minimum of 22 sentences to a maximum of 282 sentences with a mean of 84.97 sentences per annual report and standard deviation of 44.451. This result indicates that Saudi Arabia is at a moderate level of CRD among developing and developed countries.

Table 4. Descriptive statistics for dependent, independent, and control variables

Variable	*Min*	*Max*	*Mean*	*Std. Dev.*	*Skewness*	*Kurtosis*
Total number of CRD Sentences	22	282	84.97	44.451	1.253	1.837
General Risk Information	0	53	8.78	8.219	2.299	7.366
Accounting Policies	4	68	24.52	13.243	1.017	0.64
Financial Instruments	0	21	3.15	4.052	1.501	2.59
Derivatives Hedging	0	25	3.4	5.471	2.055	3.49
Segment Information	0	43	6.92	8.448	1.602	3.058
Operational Risk	2	126	24.83	17.961	1.776	4.258
Financial Risk	0	57	13.02	9.545	1.05	2.201
BSize	4	12	8.16	1.50	0.11	0.02
InDs	0	1	0.50	0.20	0.43	-0.39
EDs	0	0.5	0.14	0.11	0.65	0.03
RoyMem	0	0.4	0.03	0.08	2.75	7.35
BM	1	19	5.12	2.23	1.86	6.24
Lev	0.22	84.98	37.69	21.15	.225	-.992
FSize	97182	332783648	13014026.41	41195766.24	5.735	35.784

5.2. Multivariate analysis

Table 5 presents the results of the firm fixed effects regression analysis for CRD. The regression model is statistically significant (p-value > 0.01) and the R2 within is 0.241, which indicates that the regression model explains 0.241 of the variation of CRD.

Table 5. Results of the firm fixed effects regression analysis for CRD

Variables	*Predicted sign*	*Model 1 Initial results*		*Model 2 Alternative measurement (Board independence)*		*Model 3 Alternative measurement (Executive directors on the board)*	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant		-1.673	-2.12**	-1.362	-1.84*	-1.660	-2.10**
BSize	-	-0.023	-2.55***	-0.029	-3.39***	-0. 023	-2.43**
InDs	+	0.304	1.49			0.298	1.54
InDsDummy				**0.077**	**3.28*** **		
EDs	-	-0.071	-0.52	-0.070	-0.53		
EDsDummy2						**-0.020**	**-0.76**
EDsDummy3						**-0.008**	**-0.18**
RoyMem	+	0.354	2.10**	0.357	1.95*	0.371	2.42**
BM	+	0.116	2.28**	0.120	2.39**	0.125	2.43**
FSize	+	0.568	4.50***	0.523	4.41***	0.564	4.43***
Lev	+	-0.001	-0.73	-0.001	-0.59	-0.001	-0.57
F- value			6.04***		7.40***		5.56***
R^2 within			0.241		0.270		0.242
N			307		307		307

****, **, * Significant at 1%, 5%, and 10% levels, respectively*

The dependent variable CRD is the natural log of the total number of risk-related sentences. The independent variables are: BSize is the number of directors on the board of directors; InDs is the natural log of the proportion of independent directors on the board; EDs is the proportion of executive directors on the board; RoyMem is the natural log of the number of royal family members on the board; BM is the natural log of the number of board meetings per year. The control variables are: FSize is the natural log of company total assets; Lev is the rate of total liabilities divided by total assets.

The regression results in Table 5 reveal a significant and negative impact of board size on CRD, which indicates that Saudi companies with larger boards disclose less risk-related information. This result is consistent with the argument of the productivity losses arising from inflated working groups (e.g. Hackman, 1990; Jensen, 1993). Large boards are related to lower communication, less coordination and cohesiveness, and lack of motivation, which make them lose much of their power as an effective monitoring tool (e.g. Jewell and Reitz, 1981; Lipton and Lorsch, 1992; Jensen, 1993; Yoshikawa and Phan, 2003; Florackis and Ozkan, 2006).

The negative influence of board size on CRD in Saudi Arabia can be justified. According to Jensen (1993), when the board size exceeds seven or eight members it becomes less effective and more vulnerable to courtesy, favouritism and politeness at the expense of truth and frankness in the boardroom, which make it easier to be controlled by the CEO or any other controlling group. This is the case in Saudi Arabia where the average number of board members exceeds eight members (8.16). Furthermore, and like other GCC countries, most of the board members in Saudi companies are either directly or indirectly affiliated and related to the key owners, such as family and institutional owners (Alamri, 2014; Albassam, 2014), which compel them to take into account the interests of these controlling groups. This result suggests that the drawbacks of large boards in the Saudi companies outweigh the benefits suggested by agency theory, stakeholder theory, legitimacy theory, and resource dependency theory that larger boards are more able to monitor management behaviour and actions, and assure higher disclosure.

The initial results from the panel data regression (model 1 of Table 5) show that board independence (measured by the percentage of independent members on the board) has no significant influence on CRD. This result contradicts the theoretical perspective and empirical evidence. The insignificant influence of board independence in the Saudi listed companies could be attributed to the nature of the ownership structure of these companies. In a concentrated ownership environment, such as in Saudi Arabia, non-executive directors may not be truly independent (Barako et al., 2006). Controlling shareholders, such as family ownership and institutional ownership dominate the Saudi listed companies, and, thus, have a strong influence on board composition with a tendency to assign board members with less independence to better serve their interests (Setia-Atmaja et al., 2009).

Despite the interpretation of the initial result, further analysis is conducted to confirm the robustness of the initial result, and to identify whether the SCGRs requirement for the minimum level of board independence (shall not be less than two members or one-third of the members, whichever is greater) is effective. Therefore, the analysis is repeated in model 2 of Table 5 with an alternative measurement of board independence using a dummy variable (InDsDummy) of 1 if the level of board independence is equal to or above 33.3%, and 0 for otherwise (Johari et al., 2008). The results show a significant positive impact of board independence on CRD, which emphasises the usefulness of the threshold of board independence suggested by the SCGRs. This result reflects the theoretical arguments (e.g., agency and resource dependency theories) and empirical evidence (e.g., Elshandidy et al., 2013; Ntim et al., 2013) that independent directors on the board are more likely to strengthen board effectiveness and promote CRD.

The initial results (Table 5 model 1) reveal an insignificant relationship between executive directors on the board and CRD. Further analysis is carried out using a categorical measurement according to -1 and +1 of standard deviation (Tabachnick and Fidell, 2007). The results confirm the initial evidence indicating that executive members on the board have no influence on CRD. This result can be explained by agency theory.

Executive directors are more willing to provide less disclosure and hide some vital information, such as risk-related information to mitigate outsiders' control and serve their own interests. Proprietary cost theory attributes the poor effect of executive directors on CRD to the nature of most of the risk-related information as private and for internal use only with a high degree of commercial sensitivity.

As they usually work alongside the managers, executive directors on the board may face difficulty to monitor and affect management's actions (Fama and Jensen, 1983). The close tribal and social relationships between Saudi executive directors and companies' management and controlling shareholders, such as family owners, may create common interests that force executive directors to appease management and controlling shareholders at the expense of the accuracy and integrity of their judgments to protect all shareholders' rights. This could affect their ability to influence CRD.

The results show a positive and significant relationship between royal family members on the board of directors and CRD. This finding indicates that members of the royal family in Saudi Arabia may be more effective than other families' members on the board and that they have a different view regarding CRD as a key tool to monitor management and protect shareholders rights. In fact, royal family members derive their monitoring power from their close tribal, social, and political relationships with the ruling family, in addition to being an integral part of the Saudi government. This makes it imperative for them to enhance government plans and regulations, especially those related to transparency and disclosure. The result also supports the proposition that royal family members could use CRD to signal their effective monitoring role to mitigate information asymmetry, and thus, persuade dissenting views of the royal representation on the companies' boards and their intervention in the management.

With regards to the role of board meeting frequency, the results show a significant positive association between board meeting frequency and CRD, indicating that the Saudi companies' boards that meet frequently are more effective in enhancing CRD. This result offers empirical support for the SCGRs requirement for Saudi corporate boards to meet frequently and allocate sufficient time to perform their responsibilities effectively. It also provides further empirical support for the findings of Laksmana (2008), Kent and Stewart (2008), Allegrini and Greco (2013) that reveal a positive impact of board meeting frequency corporate disclosure. However, Dominguez and Gamez (2014) find insignificant relationship between board meetings and CRD.

With respect to control variables, firm size is found to be significantly and positively related to CRD, indicating that large Saudi companies disclose a higher level of CRD. This result offers empirical support for prior findings that reveal a positive influence of firm size on CRD (e.g., Probohudono et al., 2013; Dominguez and Gamez, 2014; Al-Shammari, 2014; Elshandidy and Neri, 2015; Abdallah et al., 2015). However, the results report an insignificant association between leverage and CRD. This implies that leverage does not affect CRD. Despite a finding that contradicts the theoretical argument, it is consistent with prior risk disclosure studies (e.g., Linsley and Shrives, 2006; Abraham and Cox, 2007; Lopes and Rodrigues, 2007; Amran et al., 2009; Mousa and Elamir, 2013; Dominguez and Gamez, 2014; Baroma, 2014).

6. CONCLUSION, LIMITATION, AND FUTURE RESEARCH

This study attempts to investigate empirically the impact of board characteristics and firm-specific features on CRD in 307 annual reports of 85 Saudi non-financial companies over four years, from the period of 2008 to 2011. The results from the content analyses indicate that Saudi companies disclose a moderate level of risk-related information in developing and developed countries. A multi-theoretical framework has been used in developing the hypotheses. Using unbalance panel data, the results of firm fixed effects regression model is consistent with the theoretical perspective and empirical evidence. As expected, CRD is significantly influenced by board characteristics. Boards that are small in size, more independent, comprise more royal family members and meet more often disclose more risk-related information. Furthermore CRD is found to be positively affected by firm size. On the other hand, executive directors on the board, and leveraged, have no impact on CRD. The results of this study have some implications for regulatory bodies regarding the appropriate board structure to enhance corporate disclosure.

However, this research has some limitations. First, annual reports are not the sole source of CRD, thus, other alternative means, such as interim reports and websites, may be subjected to future research. Second, content analysis, including the classification and scoring process of CRD, is another limitation as it is inevitably subjective. Third, as this study highlights the role of board characteristics on CRD, there is a need for more risk reporting research to investigate the influence of corporate governance, such as board committees and ownership structure on CRD. Finally, the unique setting of Saudi Arabia can be serve as a motive for deeper research on the impact of family, tribal and social values and cultural dimensions on CRD which can strengthen the results and deepen our understanding of key determinants of CRD in Saudi Arabia. Despite these limitations, this study offers insights concerning corporate governance and CRD practices in Saudi Arabia.

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THE RELATIONSHIP BETWEEN CORPORATE GOVERNANCE MECHANISMS AND THE PERFORMANCE OF SAUDI LISTED FIRMS

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Abstract

This paper gauges, both qualitatively and quantitatively, the pertinent variables to corporate governance practices and their relationship to business productivity in the context of the Kingdom of Saudi Arabia. This study was conducted in response to the limited literature in this context. A new code of corporate governance was issued by the Saudi Arabian Capital Market Authority as a direct consequence of the 2006 stock market crash; in 2010, the code was made mandatory for listed firms. Rigorous empirical studies are practical not only for Saudi Arabia and its policy makers but also potentially for solving global investment issues and ensuring security. This study found two variables to have a significant negative relation: chief executive officer turnover and independent board members. Thus, greater rates of chief executive officer turnover are associated with negative firm performance. In addition, independent board directors' negative value was found to be very close to zero and significant only at the 10% level. Consequently, some caution is required when considering this result.

Keywords: Corporate Governance, Firm Performance, Saudi Arabia, Stock Market
JEL Classification: G10, G30, G34, L25
DOI: 10.22495/cocv14i2c2p7

Acknowledgments

The author would like to thank his PhD supervisor Dr Everton Dockery for all of his help and support in completing the thesis. The author would also like to thank the Saudi Arabia Capital Market Authority, Tadawul and Mubasher for their help in providing data for this project.

1. INTRODUCTION

There appears to be a limited emphasis on the Saudi board of directors, its subcommittees, the legal system and their effects on firm performance (Falgi, 2009). This paper intends to focus on this gap in the literature by analysing internal corporate governance mechanisms and firm characteristics and their impact on the Saudi stock market.

Many regulations and market laws have yet to be implemented effectively (World Bank, 2009). Therefore, it is important to evaluate corporate governance mechanisms and their impact on Saudi firm performance, to enable policy makers to establish the consequences and effectiveness of corporate governance policies.

The performance of listed firms in Saudi Arabia has been erratic and fluctuating. In 2010, 25% of listed firms were deemed to be negative performers based on their return on equity (ROE), 20% were deemed to be negative performers based on their return on assets (ROA). This poor performance has been attributed to various factors, such as the regressive implementation of company strategies as well as corporate governance (Peng et al., 2003; AlSaeed, 2006).

Kim (2010) states that good corporate governance can boost investments and further develop the stock market, which benefits macroeconomic growth. Good corporate governance attracts and facilitates investments, as it sends a secure and safe message to investors with respect to the risks involved in investment (Heenetigala and Armstrong, 2011).

There has been increased growth in the number of listed firms in Saudi Arabia due to the privatisation initiative led by the government. The number of listed firms distributed across various industries with different ownership structures and concentrations increased from 75 in 2000 to over 170 in 2015. In addition, there has been further interest in foreign investment due to its stability and with the opening of the Saudi stock market to foreign investment in 2015. Indeed, Tadawul is the only exchange in Saudi Arabia in which stocks can be traded.

It was only after 2005 that corporate governance concepts were deployed in Saudi Arabia, when the Capital Market Authority (CMA) began to pay closer attention to Saudi firm performance. Subsequently, the 2006 stock market crash necessitated a much-needed appraisal. There were increasing calls for the need of corporate governance and effective regulation and practices, particularly transparency, reporting and accountability (CMA, 2006). Since then, corporate governance received an increased emphasis and focus from academic interest to support from the Saudi government. Corporate governance is currently a fundamental focus in Saudi Arabian business environment. The CMA established the Corporate Governance Code in 2006, which acted as a guideline. In 2010, it was made mandatory, which included the obligation for firms to explain any deviations from the Corporate Governance Code.

The board of directors and the audit committees are primary internal defence lines that ensure good corporate governance practices and protection for firm shareholders and stakeholders. The board of directors are responsible for overall strategic running of the company, and the audit committee monitors and ensures the financial integrity of policies and activities.

Al-Twaijry et al. (2002) found that the audit committees in Saudi Arabia include vague job descriptions and that their roles are often blurry. They were deemed to be set up in a regressive manner in terms of their inadequate independence, lack of expertise and limited implementation of objectives. Further reforms and stringent regulations were deemed crucial to rectify this and to improve the effectiveness and professionalism of the audit committee. Al-Moataz (2003) investigated Saudi audit committees by evaluating against best practices; the study reiterated similar concerns in terms of their responsibilities, lack of professional qualifications and independence.

The current literature on Saudi corporate governance and its relation to firm performances is sparse, partly due to the lack of available data. This study aims to perform a comprehensive investigation into the corporate governance mechanisms used in Saudi Arabia. This will, in turn contribute towards the limited literature on the Saudi market. This study employs a wide range of key corporate governance mechanisms used widely in the established empirical literature, and the findings would be beneficial to Saudi policy makers and investors.

Many existing literature have demonstrated that various features of corporate governance could potentially enhance the performance of firms (Baysinger and Butler, 1985). This study aims to gauge the effectiveness and relationship of these corporate governance variables on Saudi listed firm performance. This study also expands on the limited literature, especially in the context of issuing new regulations, either from international bodies for banks, such as Basel, or local authorities, such as the CMA. This study expands on similar studies, like that of Bauer et al. (2009), by testing the variables related to corporate governance. The increased availability of data ensures potentially greater nuance in this field of study.

Improved corporate governance is an emerging phenomenon in developing economies and has been interpreted negatively in certain contexts in terms of restrictions. This has been noted in different regions and business models (Al-Motairy, 2003). Corporate governance deployment in Saudi Arabia is still at a developing stage; hence, further evolution and modifications are anticipated and required.

This study used various corporate governance mechanisms that are widely used and are of interest to investors in terms of analysis and evaluation. This is much more expedient than the utilisation of self-constructed governance measures. This study utilised corporate governance variables that cover a wider range of categories that represent governance compared to other studies. For example, the Governance Index (G Index) used by Gompers et al. (2003) has been used in many studies; however, this index is based on shareholder rights and takeover protection only (Bauer et al., 2009). The main advantage of the G Index is its inclusion of many governance mechanisms and its effects in one index (Bohren and Odegaard 2003; Black et al., 2006). However, there appear to be no studies that investigate all the variables and mechanisms identified in this study.

Thus, this study aims to be a comprehensive study that considers detailed variables with respect to corporate governance to help explain returns. Many studies have measured various organisational aspects on corporate governance enforcement and its impact on performance, including company size, structure, directors' salaries and compensation, along with other variables that relate to corporate governance that could potentially enhance the performance of firms (Baysinger and Butler, 1985).

This paper is organised as follows. Section 2 reviews certain existing literature on corporate governance and firm performance and discusses the various corporate governance mechanisms employed in this paper to investigate market performance. Section 3 discusses the data and outlines the methodology of this study and Section 4 provides the analysis and evaluates the results; finally, Section 5 concludes the paper.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A plethora of studies have explored both corporate governance and firm performance (Berle and Means, 1932; Jensen and Meckling, 1976; Demsetz and Lehn, 1985; Claessens et al., 2000; Berglof and Claessens, 2004; Dockery et al., 2012). Most of the corporate governance research originates from the pioneering thesis of Berle and Means (1932), in which the authors argued that the separation of ownership and the control of firms gives too much control and power to the managers of large corporations. This is made worse by diffused ownership structures. Owners were argued to have difficulty in controlling the managers employed to run day-to-day business. There is an inherent conflict of interest between owners and managers in this agency model, and it was viewed that managers did not have the same interests as shareholders. Rather than distributing profits back to shareholders, managers often prefer to re-invest profits or, in more extreme cases, pursue their own personal privileges and perks. Managers were viewed as a self-perpetuating oligarchy who were no longer accountable to the owners they were supposed to represent. Berle and Means argued that such an issue can be detrimental for firms and have negative economic and social effects. In their research, the focus on corporate governance as a specific strand of literature was born, and the separation of ownership and control is now commonly referred to as the agency theory.

Most studies have focused on very specific corporate governance issues, such as ownership structure, board of director composition and chief executive officer (CEO) pay, and gauged any relationships of these factors with firm performance. Indexes have also been created to study multiple variables as an alternative methodology, such as the G Index of Gompers et al. (2003); however, there appear to be some caveats. For example, the G Index is built on only one facet of corporate governance (i.e., takeover provisions) and measures the balance of power between shareholders and management (Bauer et al., 2009). Furthermore, in Saudi Arabia, takeovers do not occur as frequently as they do in developed economies; hence, this methodology may be considered inappropriate for application in the Saudi market.

There are two main models of corporate governance: the market model and the control model (Lin et al., 2006). The market model is used in countries like the United States (US) and the United Kingdom (UK), where there are highly liquid markets with dispersed shareholders and where investors have no prior relation to listed firms (Coombes and Watson, 2001). In such markets, corporate governance emphasises the need for the board structure to be a separate objective body that acts independently of other firm management (Gregory and Simmelkjaer, 2002). The control model is more commonly used in places like Europe, Asia and Latin America, where there appears to be no clear separation of ownership and control rights, where shareholding is more concentrated and where owners hold seats on the board (La Porta et al., 2000; and Lin et al., 2006). Klapper and Love (2004) investigated 500 companies from 25 emerging markets and found corporate governance at a company level appears to be of paramount importance in emerging markets, which have poor investor protection. The study posits stronger institutional settings can act to substitute for company level corporate governance.

Durnev and Kim (2005) studied legal framework on the corporate governance practices of 859 companies from 27 countries and concluded that ownership structure, investment opportunities and the requirement for external finance all impact corporate governance quality. Companies with greater competence in governance were found to have greater value, measured using Tobin's Q ratio. Some studies have gauged the theory of the linking effects of corporate governance and dividend policies with performance. The results provide significant evidence towards corporate governance effect on Tobin's Q ratio and ROA (Bebczuk, 2005; Das et al., 2004).

Further, some studies have examined the extent to which ownership structure affects firm performance. The importance of corporate governance can be highlighted in scenarios in which there are conflicts of interest between managers and shareholders or between large controlling shareholders and small shareholders. In these scenarios, managers or the large shareholders are only entitled to a small share of the company's net revenue; however, they have full appropriation of resources (Bebczuk, 2005). Insiders of the firm are most likely to maximise their utility of both pecuniary and non-pecuniary benefits, even while the rest of the firm's shareholders do not. Such benefits are the result of the amount of power and influence managers and large shareholders have in companies' decision-making processes (La Porta et al., 2000; Claessens et al., 1999; 2001). These anomalies can be counterbalanced by implementing and enforcing good corporate governance in a setting with an effective legal and regulatory environment. These mechanisms discourage any harmful activity by insiders and, if committed, can be brought in front of regulatory bodies and legal action may be pursued. The separation of firm cash flows and control rights might negatively impact small shareholders and the valuation of a firm. Jensen and Meckling (1976), Johnson et al. (2000) and Morck et al. (1988) argued that incentive effects of concentrated ownership can have potential benefits for firm performance and value.

Studies have consistently investigated the governance nexus (i.e., relationship between corporate governance and performance) directly or indirectly at an international level using cross-country firms (Claessens et al., 1999; La Porta et al., 2002) and country-specific data (Gompers et al., 2003; Black et al., 2006). Most literature has displayed the beneficial effects of corporate governance on both firms and the economy as a whole.

2.1. Board Size

Certain literature has investigated whether board size facilitates greater company efficiency. Generally, it has been found that smaller boards are more effective than larger ones. Yermack (1996) found that a smaller sized board is more effective in the US; this is corroborated by the results of other studies (Ahmed et al., 2006). Eisenberg et al. (1998) studied board size in small- and mid-sized companies and found smaller boards to be more effective. Further, Huther (1997) and De Andres et al. (2005) found larger board sizes to have a negative effect on firm performance. Mustafa (2006) and Chan and Li (2008) also found poor performance in firms with larger boards, as larger boards can suffer from poor coordination, communication and flexibility. Moreover, larger firms can become ineffective, lose their aims and become dominated by board CEOs (Jensen, 1993). In addition, Jensen (1993) suggested that small board sizes are associated with better monitoring function. Similarly, Lipton and Lorsch (1992) claimed board functions become less effective when boards become larger in size, and they recommended an ideal board size of 8–9 members. They also argued that any potential benefits from more board members would be offset from slower decision-making processes. In contrast, other studies (Bhagat and Black, 2002; Beiner et al., 2004; Limpaphayom and Connelly, 2006) failed to find any significant relationship between the size of the board of directors and performance of firms. A recent study of the Malaysian stock market by Zabri et al. (2016) found ROA to have a weak negative relation with board size, but when measured using ROE there were no significant relationship. Fernandez (2015) investigated the relationship between board size and the performance of firms from 7 European markets. The author based the hypothesis on the literature review and theory and hypothesised firm size to have a positive relation to board size. Furthermore, after an optimal board size it was hypothesised to affect firm performance negatively. The study found no significant evidence to support the hypotheses. Therefore, hypothesis H1 in this paper is as follows.

H1: Board size has a positive relation with firm performance (Saudi board size relative to other markets, are small with an average of 8 members on the board of directors)[6].

2.2. Non-Executive and Independent Board Directors

Jensen and Meckling (1976) argued that boards with a higher number of external or non-executive directors may be able to mitigate agency issues by enabling boards to be more independent in scrutinising and controlling firm management behaviour. However, there are mixed findings from studies that have investigated the relation between board composition (i.e., the proportion of non-executive and/or independent directors) and firm performance. Rhoades et al. (2000), Dehaene et al. (2001), Othman (2003) and Lefort and Urzúa (2008) found that non-executive directors have a positive effect on performance of firms. Kamardin (2009) displayed a significant relation between non-executive directors and firm performance, as measured by the ROA. However, Coles et al. (2001) demonstrated external directors to have a negative effect on the performance of firms. Similarly, Erickson et al. (2005) showed negative relationship between increased board independence and the value of firms. Guo and Kumara (2012) investigated the Sri Lankan stock market and found a small negative relationship of non-executive directors with firm value. Some studies (Bhagat and Black, 2002; De Andres et al., 2005) resulted in no significant relation between the composition of boards and firm value. Bhagat and Bolton (2013) found mixed results over different time periods in their sample between 1998 – 2007 of the relation between board independence and operating performance. Pre-2002 displayed a significant negative relation and post 2002 displayed a significant positive relation. Rahman et al., (2015) proposes a similar pre- and post- Malaysian code of corporate governance study of the relation between board independence and firm performance. They hypothesised a positive association of the proportion of non-executive directors; although they did not carry put an empirical investigation to test their hypotheses. Liu et al., (2014) studied independent board directors in China and found it to have a positive impact on the operating performance of firms. Knyazeva et al., (2013) also found a positive relation between board independence and operating performance as well as firm value.

This study benefits from existing data on both non-executive directors and independent directors (also known as outside directors) in Saudi Arabia. However, the difference between the two in the Saudi market can be subtle, as both are meant to be impartial and work for the benefit of all stakeholders. Independent board members are no longer considered independent if they hold more than 5% of the issued shares of the firm, are representatives of another person who holds 5% or more of total shares, are related to any other people on the board or other executives, have held their position in the firm or any of the firm's entities in the last 2 years, are board members of another company or have held a position in any affiliated companies in the last 2 years. Non-executive directors do not have a full-time management role in firms and receive no salary[7]. The two hypotheses tested in this context are as follows.

H2: Non-executive directors have a positive relation with firm performance.

H3: The total number of independent directors has a positive relation with firm performance.

2.3. CEO Duality

The board of directors is generally led by chairman whose roles involve running meetings, overseeing the processes of recruiting and the dismissal of CEOs, and evaluating CEO compensation (Jensen, 1993). The chairman should be independent to perform his or her leadership role objectively. The CEO may have self-interests; therefore, conflict in interests may arise (Fama and Jensen, 1983; Jensen, 1993). It is practical to have the chairman and CEO positions separate to reduce any dominating influence over the board of directors (Van Den Berghe and Levrau, 2004) and achieve an appropriate balance of power to make management more accountable and to improve the independent decisions made by the board without management influence (OECD, 2004).

Jensen and Meckling (1976) posited there is a high likelihood of CEOs who also hold the chairman position to adopt strategies for personal gain, which could impinge on the maximisation of shareholder wealth and inevitably have a detrimental impact on the firm. Mallette (1992) also argued that this duality leads to greater instances of conflicts of interest, as the CEO sets the board meeting agendas and has powers to influence selection of board directors. The study concluded CEO duality hinders board ability to monitor executives effectively.

However, there have also been mixed results on this issue of duality and CEOs. Shrivastav and Kalsie (2016), Peng et al., (2009), Coles et al. (2001), Bhagat and Bolton (2008), Feng et al. (2005) and Mustafa (2006) found a significantly negative relation between CEO duality and firm performance. However, Schmid and Zimmermann (2008) and Wan and Ong (2005) did not find any significant differences between firms with or without CEO duality. Moscu, on the other hand, (2015) found a positive relation between CEO duality and performance in Romanian firms. In light of the above, hypothesis H4 is as follows.

H4: CEO duality has a negative relation with firm performance.

2.4. Audit Committee Size

Audit committee size is viewed as a characteristic of the effectiveness of the audit committee as a corporate governance mechanism (Cadbury Committee, 1992). Corporate governance reports, such as the Corporate Governance Regulation (CMA, 2006), propose a minimum of three members on an audit committee. Braiotta (2000) and Karamanou and Vafeas (2005) state that large audit committees have better organisational abilities and authority as

[6] See descriptive statistics of this paper

[7] CMA Corporate Governance Regulations (2006): http://www.cma.org.sa/En/Documents/CORPORATE%20GOVERNANCE.pdf

well as a wide knowledge base. However, Karamanou and Vafeas (2005) argue that, if audit committees are too large, they can become ineffective. Processes and responsibilities may become lost, and, ultimately, committees may fail to quickly and accurately complete the tasks they are supposed to do. Aldamena et al. (2012) found smaller audit committees with greater experience relate positively to firm performance. Thus, hypothesis H5 is as follows.

H5: Audit committee size has a positive relation with firm performance.

2.5. Management Share Ownership

Jensen and Meckling (1976) view management ownership of shares to be a good mechanism that aligns management interests to that of shareholders. However, Shleifer and Vishny (1997) and Khan et al. (2011) show that high management ownership can help poorly performing managers hold their posts, thus lowering the effectiveness of governance and promoting the inefficient use of the market for corporate control.

The effect of the ownership of shares by management on firm performance has displayed mixed results. A positive relation has been found in developed countries such as the US and Japan (Morck et al., 1988; Hiraki et al., 2003) and in certain developing countries like the Czech Republic, Slovenia and Malaysia (Claessens, 1997; Claessens et al., 1999; and Amran and Ahmad, 2013). However, a study of Korean firms by Baek et al. (2004) found that higher management ownership in terms of the concentration of shares led to greater equity losses during the 1997 financial crisis in Korea. This supports the study by Joh (2003), which also found a negative relation between management ownership and company performance in Korea. Bos et al., (2011) found mixed results according to concentration levels of management ownership of shares in the UK. Management ownership of less than 5% displayed a maximisation of firm wealth. Ownership levels between 5% and 15% displayed a negative relation to firm performance and ownership stakes above 15% displayed a positive effect on share value.

This study uses two mechanisms to investigate the impact of management share ownership: the total number of shares owned by top executives and the total number of CEO shares. Thus, the following two hypotheses were tested.

H6: The total number of shares owned by managers has a positive relation with firm performance.

H7: The total number of CEO shares has a positive relation with firm performance.

2.6. CEO Turnover

CEO turnover is an important variable that describes the replacement of CEOs due to their poor performance. Many studies have found an inverse relation between firm performance and CEO turnover (Coughlan and Schmidt, 1985; Conyon and Florou, 2002 and Jenter and Kanaan, 2015).

Friedman and Singh (1989) argued that, although firm performance is a major factor that affects CEO turnover, other factors are important and cannot be overlooked, such as whether the existing CEO is closer to retirement age, whether CEO departure is voluntary and whether the replacement CEO was found beforehand.

Volpin (2002) and Gibson (2003) argued that CEO turnover is higher in firms with good governance systems and found that the likelihood of CEO turnover increases with poor prior stock returns. This implies that the board of directors looks after the rights of shareholders (Weisbach 1988; Furtado and Rozeff, 1987). On the other hand, Rachpradit et al. (2012) found no association between the probability of CEO turnover and firm performance. However, it has been argued that CEO turnover is crucial for the development of firms (Chang and Wong, 2004). Thus, hypothesis H8 is as follows.

H8: CEO turnover in Saudi Arabia has a negative relation with firm performance.

3. DATA AND METHODOLOGY

This paper focuses on corporate governance mechanisms in Saudi Arabian listed firms utilising the maximum available data at the time of download from January 2007 to December 2014. In total, 169 listed firms from the Saudi stock market were used in this sample. The data was obtained from various sources, including Tadawul, Mubasher and the Saudi CMA. The study measured firm performance using stock returns.

Al-Matari et al. (2012) suggested that certain corporate governance mechanisms could affect the performance of firms, such as CEO duality, board composition, board size and audit committee size. This study includes additional variables that have-not been previously investigated, including management ownership of shares and CEO turnover.

The aim of this paper is to study the relation between listed firm performance and corporate governance mechanisms measured through independent variables using regression models. This study adds additional corporate governance mechanisms to the Fama and French (1993) three-factor model to capture the relation between corporate governance and firm performance in the Saudi market. Different regression models were used to study the chosen governance variables. Since we used the monthly cross-sectional time-series data of 169 companies (from January 2007 to December 2014), we used longitudinal data regression (i.e., panel data) and employed random-effects generalised least squares (GLS) regression to estimate the regressions.

Equation (1) shows Fama and French (1993) three-factor model.

$$R_{pt} - R_{ft} = \alpha_p + \beta_1[R_{mt} - R_{ft}] + \beta_2[SMB] + \beta_3[HML] + \mu_{pt} \quad (1)$$

Where:
R_{pt}= the return on the portfolio or stock p at time t;
R_{ft}= the return on the risk-free asset at time t;
α_p= the intercept of the model for the portfolio or stock p;
β_1= the systematic risk of the portfolio or stock p;

R_{mt}= the return of the market portfolio at time t;
SMB = the small-minus-big estimates of the size of the stock;
β_2 = the measure's exposure to the stock size;
HML = the high-minus-low estimates of the book-to-market ratio of stocks; and
β_3 = the measure's exposure to stocks with a high book-to-market ratio.

Equation (2) describes our model to investigate the effects of corporate governance (CG) mechanisms on Saudi listed stocks.

$$R_{pt} - R_{ft} = \alpha_p + \beta_1[R_{mt} - R_{ft}] + \beta_2[SMB] + \beta_3[HML] + \beta_4[CG\ VARIABLE] + \mu_{pt} \quad (2)$$

Where:
R_{pt}, R_{ft}, α_p, $\beta_1 R_{mt}$, SMB, β_2, HML, and β_3 are the same as in Equation (1);
CG variable = the various corporate governance mechanisms;
β_4 = the measure's exposure to the corporate governance variable on firm performance; and
μ_{pt}= the error term at time t.

The various corporate governance variable employed in this study are as follows:

- Board size (i.e., the total number of directors on the board of directions);
- Non-executive directors (i.e., the total number of non-executive directors on the board of directors);
- Independent directors (i.e., the total number of independent directors on the board of directors)
- CEO duality (i.e., when the chairman and CEO positions are held by the same person; the variable is equal to 1 if CEO duality exists and 0 otherwise);
- Audit committee size (i.e., the total number of members on the audit committee);
- Total number of shares owned (i.e., the total number of shares owned by directors);
- CEO ownership of the firm's shares (i.e., the number of shares owned by the CEO);
- CEO turnover (i.e., the change in CEO; the variable is equal to 1 if the CEO changes and 0 otherwise).

To execute the methodology, the small-minus-big (SMB) and high-minus-low (HML) estimates from Equations (1) and (2) were calculated. First, the firm size (i.e., the firm's market equity) was calculated, which is the price multiplied by the number of shares. Then, the book-to-market equity (i.e., the ratio of a firm's book value of common stock to its market value) was calculated. Both variables have been argued to have explanatory power in terms of market returns and consider the effects of certain variables, such as leverage and the price to earnings ratio on firms' returns (Fama and French, 1993).

The size variable (i.e., the SMB) and the book-to-market equity variable (i.e., the HML) are mimicking portfolios that are obtained by creating six portfolios that copy the underlying risk factors associated with firm size and book-to-market equity. This was done by first calculating the median and splitting the Saudi stocks into two portfolios by size (as small [S] or big [B]). Then, the Saudi stocks were sorted into three book-to-market equity portfolios using the following breakpoints: 30% (low [L]), 40% (middle [M]) and 30% (high [H]). It has been argued that the book-to-market equity has more explanatory power for returns than the size of firms; thus, it was split into three groups instead of two. Then, six portfolios were constructed from the two size portfolios and the three book-to-market portfolios: S/L, S/M, S/H, B/L, B/M and B/H. The S/L portfolio includes small stocks that are also present in low book-to-market portfolios, and the B/M portfolio includes big stocks that are also present in middle book-to-market portfolios. The monthly value-weighted returns from the six portfolios were calculated from month to month (Fama and French, 1993).

SMB considers the risks faced by firms due to their size. Small-stock portfolios (S/L, S/M and S/H) and big-stock portfolios (B/L, B/M and B/H) differ by size; therefore, SMB represents the difference between the returns of small- and big-stock portfolios with approximately the same weighted average book-to-market equity. This allows for differentiation of the effects of returns from small and big stocks and for the separation of the impact on returns from differences in the book-to-market equity. The book-to-market factor (i.e., HML) replicates the risk factors for returns related to the book-to-market equity. HML represents the difference between the two-high book-to-market portfolios (i.e., S/H and B/H) and the two-low book-to-market portfolios (i.e., S/L and B/L) in terms of the simple average monthly return. HML represents the return of the high and low book-to-equity portfolios with about the same weighted average size. Therefore, the difference between the two returns should be free from the effects of size on the returns and focuses on the difference in returns between high and low book-to-market equity firms.

3.1. Descriptive Statistics

Table 1 displays the descriptive statistics for all the variables. The standard deviations of 8 of the 12 variables are much larger than the mean. This indicates that the data is spread widely or that the mean does not represent the data. Calculating the median for each variable is a more appropriate measure since the median has similar values to the mean.

Saudi boards have an average of 8 members, which is regarded as a small board globally, with a minimum of 4 and maximum of 13 members. The average number of non-executive directors is 4, which is half of the average board size. Non-executives on the board range from a minimum of 0 to a maximum of 11 members. Similarly, on average, there are 4 independent board directors, with a minimum of 0 and a maximum of 11 members. The average audit committee size is 3 members, with a minimum of 1 and a maximum of 7 members. The standard deviation values for board size, non-executive directors, independent directors and audit committee size are all much smaller than the means, suggesting that the data here is distributed closer to the mean values.

In Saudi Arabia, only 8 of the 169 firms in this sample had CEO duality, with an average value of 0.035. CEO turnover had an average value of 0.152. The total number of shares owned by managers and CEOs had mean values of 38,359,000 and 691,543, respectively.

Table 1. Descriptive Statistics

Variable	*Mean*	*Median*	*Minimum*	*Maximum*	*Standard Deviation*
Rp-Rf	0.363	-0.231	-66.021	396.171	13.800
SMB	-1.001	-1.773	-16.878	16.092	5.914
HML	-2.344	-1.947	-17.101	6.279	4.372
Rm-Rf	-0.186	1.281	-26.379	20.332	7.359
Board Size	8.450	9	4	13	1.624
Non-Executive Director	4.377	4	0	11	2.437
Independent Board Directors	4.258	4	0	11	1.941
CEO Duality	0.035	0	0	1	0.184
Audit Committee Size	3.355	3	1	7	0.678
Total Number of Shares Owned	38,359,000	2,161,490	0	6,039,000,000	318,011,000
Number of CEO Shares	691,543	1,000	0	36,401,000	3,071,100
CEO Turnover	0.152	0	0	1	0.359

Table 1 provides descriptive statistics on all the variables and corporate governance mechanisms

4. RESULTS AND DISCUSSION

4.1. Correlation analysis

Table 2 displays the 8 independent variables: board size, non-executive directors, independent board directors, CEO duality, audit committee size, total number of shares owned, CEO shares and CEO turnover. None of these variables had significant associations or correlations with the dependent variable Rp-Rf. However, significant positive and negative correlations existed between the independent variables (Table 2). For example, the independent variable representing CEOs number of shares was shown to have significant positive and negative associations with six of the other independent variables. Similarly, CEO duality was shown to have significant negative associations with three other independent variables.

4.2. Regression Analysis

Table 3 shows the Fama and French model, which explains the cross-section of returns in the Saudi stock market between January 2007 and December 2014, as displayed by the significance of the variables. Furthermore, most of the corporate governance variables included in the analysis have no significant impact, except for CEO turnover and independent board directors. R-Sq, the percentage of variability in the dependent variable determined by the independent variables, was found to be at 32–34%, which is an expected result. Three other aspects of each model were analysed: the signs of the coefficients, the values of the correlations between all the variables and the significance of these correlations. If the sign is positive, the independent variable displays a positive relation with firm performance; if the sign is negative, then the relation is negative.

Board size displayed a negative coefficient of -0.029; however, it is not significant. The P-value of the corresponding coefficient equals 0.619, which is much greater than $\alpha = 0.05$; thus, the null hypothesis ($H_0: \beta = 0$) was not rejected at the 5% level of significance. Therefore, Saudi board size has no significant impact on Saudi firm performance. In the study by Al-Matari et al. (2012), board size also displayed a negative relation as predicted, but it was also insignificant. Kamardin (2009) stated that this non-significant relation in the Saudi stock market could be caused by the overwhelming influence and power of CEOs. However, Fallatah and Dickins (2012) separately studied optimal board size and found a significant positive relation with firm value, measured through the Tobin's Q ratio. Ghabayen (2012) found no significant relation between board size and firm performance using ROA as their performance measure.

The number of non-executive directors, as a corporate governance mechanism, has a small negative coefficient of -0.050, but it is not significant. The corresponding P-value is 0.195, which is greater than $\alpha = 0.05$; thus, we could not reject the null hypothesis ($H_0: \beta = 0$) at the 5% level of significance. The number of non-executive directors on the board has no significant relation with stock performance. Al-Matari et al. (2012) looked at board composition of non-executive directors and found a similar negative relation, although it was also not significant.

Independent board directors also displayed a negative relation, but it is only significant at the 10% level. The corresponding P-value equals 0.089, which is less than 0.1, so we rejected the null hypothesis at the 10% level of significance. However, the result was in opposition to this study's prediction in H3. It is worth highlighting that, although the correlation estimate has a negative value, it is still very close to zero and only significant at the 10% level. Therefore, some caution is required when drawing conclusions from this result. Fallatah and Dickins (2012) focused on board independence as part of an index and also found its negative relation to firm value; thus, the findings of this study are supported by that of Fallatah and Dickins (2012).

Ghabayen (2012) investigated Saudi board composition as a ratio of independent to non-independent directors' and its effect on firm performance. The study displayed a negative and significant relation between board composition and firm performance. This negative relation implies that an increasing number of independent directors on the board have a negative impact on the performance of firms. While this result concurs with the results of this study, caution is required before concrete conclusions are drawn. This result can be benefitted by further extensions of study and even testing for causality.

CEO duality has a positive coefficient of 0.638, however, it is not significant with a P-value of 0.240. Thus, these results do not allow for the rejection of the null hypothesis. Further, CEO duality has no significant impact on stock performance, even with a positive coefficient. Al-Matari et al. (2012) found a negative relation in terms of CEO duality, as they hypothesised. Although we found a positive relation, the results were not significant.

Table 2. Correlation Analysis

	Rp-Rf	*SMB*	*HML*	*Rm-Rf*	*Board Size*	*Non-Executive Directors*	*Independent Board Directors*	*CEO Duality*	*Audit Committee Size*	*Total Number of Shares Owned*	*Number of CEO Shares*	*CEO Turnover*
Rp-Rf	1											
SMB	0.336*** (0.000)	1										
HML	-0.158*** (0.000)	-0.441*** (0.000)	1									
Rm-Rf	0.516*** (0.000)	0.215*** (0.000)	-0.102*** (0.000)	1								
Board Size	0.001 (0.916)	0.002 (0.822)	0.001 (0.905)	0.009 (0.318)	1							
Non-Executive Directors	-0.014 (0.133)	0.018** (0.048)	-0.006 (0.515)	-0.017* (0.061)	0.337*** (0.000)	1						
Independent Board Directors	-0.017* (0.065)	0.011 (0.218)	-0.003 (0.725)	-0.016* (0.073)	0.406*** (0.000)	-0.014 (0.114)	1					
CEO Duality	0.006 (0.493)	-0.004 (0.690)	0.001 (0.870)	-0.001 (0.894)	-0.118*** (0.000)	-0.058*** (0.000)	-0.133*** (0.000)	1				
Audit Committee Size	0.002 (0.855)	-0.010 (0.271)	0.004 (0.682)	0.014 (0.105)	0.254*** (0.000)	0.139*** (0.000)	0.124*** (0.000)	-0.034*** (0.000)	1			
Total Number of Shares Owned	0.006 (0.558)	0.008 (0.390)	-0.001 (0.925)	0.010 (0.263)	0.023** (0.012)	-0.045*** (0.000)	-0.034*** (0.000)	-0.019** (0.042)	-0.003 (0.735)	1		
Number of CEO Shares	0.004 (0.665)	0.002 (0.797)	-0.005 (0.599)	-0.001 (0.939)	0.031*** (0.001)	-0.035*** (0.000)	-0.056*** (0.000)	0.148*** (0.000)	-0.042*** (0.000)	0.087*** (0.000)	1	
CEO Turnover	-0.006 (0.483)	0.003 (0.760)	0.012 (0.168)	0.027*** (0.002)	0.062*** (0.000)	0.044*** (0.000)	0.073*** (0.000)	-0.054*** (0.000)	-0.013 (0.161)	-0.037*** (0.000)	-0.062*** (0.000)	1

Table 2 provides the correlation results for all the variables
*The standard errors are in parentheses, and asterisks *, ** and *** indicate significance at 10%, 5% and 1%, respectively*

Table 3. Regression Results

Corporate Governance Mechanism	*Alpha*	*Rm-Rf (Beta 1)*	*SMB (Beta 2)*	*HML (Beta 3)*	*CG Mechanism (Beta 4)*	*R-Sq*
Three-Factor Model	.779*** (.188)	.921*** (.015)	.545*** (.020)	-.105*** (.025)	-	0.32
Board Size	.943* (.504)	.917*** (.014)	.493*** (.019)	-.082*** (.024)	-.029 (.058)	0.34
Non-Executive Directors	.898*** (.204)	.928*** (.014)	.498*** (.019)	-.087*** (.024)	-.050 (.038)	0.34
Independent Board of Directors	1.069*** (.242)	.924*** (.014)	.503*** (.019)	-.081*** (.024)	-.083* (.049)	0.34
CEO Duality	.669*** (.116)	.919*** (.014)	.494*** (.019)	-.085*** (.024)	.638 (.543)	0.34
Audit Committee Size	.888* (.472)	.919*** (.014)	.483*** (.019)	-.079*** (.024)	-.060 (.137)	0.34
Total Number of Shares Owned	.688*** (.121)	.929*** (.015)	.484*** (.020)	-.095*** (.025)	-0.000 0.000	0.33
Number of CEO Shares	.739*** (.122)	.927*** (.015)	.531*** (.020)	-.096*** (.025)	0.000 0.000	0.33
CEO Turnover	.766*** (.122)	.923*** (.014)	.476*** (.019)	-.086*** (.024)	-.678*** (.261)	0.33

Table 3 displays the results of Fama and French's three-factor model of regression. It also displays the regression results for the fourth corporate governance variable, which is included in Fama and French's original three-factor model, for 169 listed firms on the Saudi stock exchange between January 2007 and December 2014. The model is as follows:

$$R_{pt} - R_{ft} = \alpha_p + \beta_1[R_{mt} - R_{ft}] + \beta_2[SMB] + \beta_3[HML] + \beta_4[\boldsymbol{CG\ VARIABLE}] + \mu_{pt},$$

*where, $R_{pt} - R_{ft}$ is the excess return of stock p at time t over the one-month US T-bill rate.$R_{mt} - R_{ft}$ is the excess market return of the Tadawul All Share Index (TASI) at time t;α_p and β_1 are coefficients that estimate overperformance and systematic risk, respectively. $\beta_2$estimates stock exposure to the-small-minus-big (SMB) factor, and$\beta_3$estimates stock exposure to firms with a high book-to-market ratio (HML).β_4 estimates the impact of the CG variable on stock performance, while μ_{pt} is the error term. The standard errors are in parentheses, and asterisks *, ** and *** indicate significance at 10%, 5% and 1%, respectively*

The size of the audit committee has a very small negative coefficient of -0.060 and is not significant. The P-value equals 0.662, which is higher than 0.05. Therefore, we could not reject the null hypothesis and concluded that firms' audit committee size has no significant relation with performance of firms. Al-Matari et al. (2012) found a significant negative effect of audit committee size on firm performance. This study found a very small negative correlation, but it was not significant. Since we used a larger data set and a longer time series, this could imply certain positive changes occurring in the structure of the Saudi market. Similarly, Ghabayen (2012) found a negative coefficient for audit committee size, although its relation to firm performance was not significant.

The total number of shares owned by board members had no significant relation with stock performance, with a P-value of 0.863. Therefore, we could not reject the null hypothesis and concluded that the number of shares owned by management has no significant association with firm performance. The number of shares owned by CEOs also has no significant relation with stock performance, with a P-value of 0.611; thus, we could not reject the null hypothesis. Fallatah and Dickins (2012) displayed that insider ownership does not have any relation with firm performance and does not impact the relation between Saudi corporate governance and firm value; this is consistent with our results. However, Fallatah and Dickins (2012) studied individual corporate governance characteristics separately and found a negative effect of executive stock ownership on firm value. Furthermore, when the authors studied director stock ownership guidelines, they found that it has a significant positive impact on firm value.

The variable of CEO turnover as a corporate governance mechanism was employed. It displayed a negative coefficient of -0.678 with a P-value of 0.009, which is less than 0.01 and is therefore significant at the 1% level; thus, we rejected the null hypothesis. This indicates greater CEO turnover is associated with negatively performing firms. This is intuitive, as a change in CEOs sends a negative signal to investors and stock market participants, which, in turn, is likely to influence negative stock returns of firms that may have already been underperforming. Although this study finds a significant relation of CEO turnover with firm performance, it does not shed light on the causality directions of the variables i.e. whether CEO turnover causes firm performance or firm performance causes CEO turnover. This study can be extended to further delve deeper and wider with additional econometric tests and models that can also be used for the other variables.

5. CONCLUSION

This comprehensive study analysed pertinent variables to deduce any relation with firm performance. The study was conducted in response to the rather limited academic literature on the implementation of corporate governance principles and its impact on Saudi firm performance. This area of study is an evolving one, and the future trajectory of corporate governance in Saudi Arabia remains uncertain.

A statistical analysis was conducted using correlation and regression models to gauge the relationship between the chosen variables and firm performance. CEO turnover showed a negative correlation; greater CEO turnover is related with negative performance. Plausible reasons for this may be the resulting low confidence of the market and investors in the firm as well as the rather implicit suggestion that the company is not being led efficiently. The study also found that independent board directors had a negative impact on firm performance; however, this effect had a very small negative value close to zero that was only significant at the 10% level. Therefore, some caution is required when interpreting this result.

Although not all available data show the other variables to have a significant relation with business performance, this could change in the future as Saudi Arabia expedites more corporate governance practices and as its economic paradigm and model begin to echo those of developed economies. Corporate governance is a relatively new phenomenon in the context of Saudi Arabia; hence, it is still evolving.

Although it is beyond the scope of this study, it would be interesting to investigate whether the current corporate governance model, which essentially emanates from the West, is suitable for use in developing countries, which have different political models, economic models and business cultures. Perhaps a more viable model that adheres to the epistemological and ontological frameworks used in Saudi businesses could be established.

This study has found two corporate governance mechanisms to have a significant relation with firm performance. An extension of this study can be made by further econometric tests such as causality studies that shed light on the direction and causes which were outside of the main aims of this investigation. It is promising that as time passes, increased adherence to good corporate governance with more data being available with greater focus on the Saudi market will lead to many more studies.

Despite certain limitations, this study provides a meaningful contribution to Saudi corporate governance regulators to assess the current relation and effectiveness of recent policies on the performance of the Saudi stock market. It will help forge future policy decisions and areas for focus as well as evaluate current practices. It can also help potentially solve global investment issues and ensure security. There are also benefits to investors in Saudi market in particular the large number of retail investors. It will also benefit foreign investors and institutions as this study sheds some light on the performance of the Saudi stock market and corporate governance mechanisms. Furthermore, company directors and managers can benefit too by evaluating their performance relative to the market with specific objectivity in relation to implementation of corporate governance mechanisms and its relation perceived by outside investors and shareholders.

This study was conducted in response to the rather limited literature available in relation to the Kingdom of Saudi Arabia. Its minimum aim is to contribute to and help fill this gap by conducting a comprehensive study of the current corporate governance mechanism and determine the existence of any significant relation with stock market performance.

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ACADEMIC SPIN-OFFS FOR THE LOCAL ECONOMY GROWTH

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Abstract

Some research supports the suggestion that start-ups can represent a driver in job creation, economic growth, innovation and competitiveness. In the Entrepreneurship 2020 Action Plan and in the Action Plan on Building a Capital Market Union (2015), one of the main actions is promoting entrepreneurship, to support financing innovation for start-ups, to develop a capital market able to stimulate new business and their growth. Policy makers support start-ups and the university promote its 3rd mission, technology transfer, with a policy of new businesses, with academic spin-offs (ASOs). Academic spin-offs can produce direct and indirect benefits on local economies, but these companies encounter many difficulties to develop. The difficulties of access to finance and lack of managerial skills are the main constraints of growth identified in literature. In the paper, we describe the results of an empirical research on spin–offs of the University of Pisa, with the purpose to capture both the benefits generated in the local area and their contribution to relation capital of the university, but also their difficulties in growth. We found that academic spin-offs have produced important effects on local economies, especially with new jobs, but they reveal some criticisms of financial management behavior, which hampers their development. In the conclusion, we debate about the role of the Capital market Union actions by promoting "financing for innovation" for the growth of academic spin-offs.

Keywords: Academic Spin-Offs, Technology Transfer, Growth Obstacles, Local Benefits
JEL Classification: G390, I230, O340
DOI: 10.22495/cocv14i2c2p8

1. INTRODUCTION

In recent years, the European policy makers are working to create an integrated capital market in Europe (Action Plan on Building a Capital Market Union, 2015). The main motivation is that, in the light of the recent financial crisis, the limits of the European capital markets have emerged: in fact, it is fragmented and difficult to access by small and medium-sized enterprises, especially for innovative start-ups. The belief in literature is that innovative start-ups play an important role in Europe for both technical innovation and for economic growth (Lawton Smith, 2000; Dahlstrand & Jacobsson, 2003; Clarysse et al., 2005; Mustar et al., 2008; Kennedy and Patton, 2011). One special kind of innovative start up is the academic spin-off (ASO), whose features make it different from the other SMEs. In fact, ASOs are companies based on the university and founded by professors or researchers. Many contributions in literature focused on several aspects of the phenomenon, but the debate about the impact and the importance that ASOs play on the local economy is already lively (Benneworth and Charles, 2005; Vincett, 2010; Iacobucci and Micozzi, 2014). As stated by Benneworth and Charles (2005), ASOs bring to the local economy several direct and indirect benefits. Following what we have just seen, it is clear the importance that these companies hold for regional development, but ASOs encounter many difficulties during first stages of their lives. The main constraints to growth are the access to finance and lack of managerial skills.

According to this consideration, the aim of this paper is to evaluate the profile of a panel of ASOs and their obstacles to create value. This aim was tested through a sample of spin-offs of the University of Pisa. We found that ASOs have difficulties in access to long term finance, financial management and working capital management are neglected (due to the lack of managerial skills in the entrepreneurial team). However, they contribute to regional development generating high-tech jobs, investing in research and development activities and thus promoting technological innovation.

In the next section, the literature review has two perspectives: (1) the importance of academic spin-offs (ASOs) for the development of the regional area; (2) the Capital Market Union and its role in support of start ups' growth. Then, we explain the methodology of an empirical research and we close with the conclusions in which we discuss also some opinions of interviewed practitioners about light and shade of Capital Market Union.

This work is a first step in the overall research, a work in progress.

2. LITERATURE REVIEW

2.1. The role of Academic spin-off in the European Economy

In the last two years, the European Commission developed an economic policy initiative, called "Capital Markets Union" (CMU), to create a more integrated European Capital Market, to support stability and economic growth. "Entrepreneurship is also the most powerful driver of economic growth in economic history" (EU Commission Vice-President, 2013). In Italy, the 2015 has signed a lively trend of the innovative start-ups, which have grown of the 60% in a year, reaching the mass of 5118, with 21.752 employees (+41%-ICE). European policy makers are promoting entrepreneurship, supporting innovation through start-ups and implementing a capital market able to stimulate new businesses and their growth: Europe needs new businessmen!

According to this strategy, universities promote their 3rd mission, technology transfer, with a policy of academic spin-offs (ASOs). Academic spin-offs are special start-up firms with features that make it different from the other SMEs. As believed by Borges and Filion (2013), there is not a single definition of ASOs, but an academic spin-off is a start-up where the entrepreneurs, during their activities as students, professors or researchers at a university, acquire technological knowledge or develop a new technology that will, in the future, be used with the support of the university´s business incubator (or another mechanism) to develop a product or a business concept that will be explored commercially by a new venture.

ASO is recognized, indeed, as the main driver in job creation, for economic growth, innovation and for the value creation of the economic system (Acs, Arenius, Hay, & Minniti, 2005; Armington & Acs, 2002; Audretsch & Thurik, 2001; Carree, Van Stel, Thurik, & Wenekers, 2002; Davidsson &Wiklund, 2001; Johnson, 2004; Minniti, Bygrave, & Autio, 2006; Storey, 1994).

Over the past 10 years, the interest in these companies has grown considerably from both researchers and policy makers, because of their role for development of scientific knowledge, innovation and regional economic development (Lawton Smith, 2000; Dahlstrand & Jacobsson, 2003; Clarysse et al., 2005; Mustar et al., 2008; Kennedy and Patton, 2011). Academic studies have discussed several aspects of the phenomenon, but less researches has focused on the impact and the importance that ASOs can play on the local economy (Benneworth and Charles, 2005; Vincett, 2010; Iacobucci and Micozzi, 2014).

As stated by Benneworth and Charles (2005), the benefits of academic spin-offs on local economies can be distinguished between direct and indirect benefits (Table 1). Direct benefits are related to the type of firms and could be more significant in successful regions rather than in peripheral ones (Malecki, 1997). Direct benefits are quantifiable in new employment and turnover growth in the area (Etzkowitz, 2001). The ASOs mission is research, so the investments in R&D activities are not only a way to fulfill their mission but also a driver to create value that could be measured through the enterprise value of the ASOs cluster.

Table 1. Benefits of Academic Spin offs on local economy

Direct Benefits	***Indirect Benefits***
• Turnover growth in the area • Job creation • R&D investments • Value creation • Networks	• Promotion of technological progress • Entrepreneurial atmosphere for innovative start ups • New Network for fund rising • Intellectual Capital

Source: Authors' elaboration on Benneworth and Charles (2005)

Academic spin-offs create also indirect benefits for their region. Different from direct benefits, the indirect ones are not quantifiable, but closely connected to their direct benefits (Iacobucci and Micozzi, 2014). The spin-offs bring a technological entrepreneurship able to develop the regional economy (Etzkowitz, 2001). They can promote a regional technology cluster (Di Gregorio and Shane, 2003) and help to create a favorable environment for the birth and growth of new technology start-ups in the same area (Lockett et al., 2003). Entrepreneurs represent an important source of variation in the economic system by introducing new types of goods and services and/or new ways of organizing the production of such (Schumpeter, 1934).

Another indirect benefit is the production of new technological knowledge (Delmar and Wemberg, 2010): spin-offs could represent an important asset for the university. The ASOs may also work with other companies in the region and contribute to infuse the knowledge through partnership, consultancy activities, shared assets, etc.

The creation of new technological knowledge, networks for access to finance (Dahlstrand, 1999) are other important direct effects. However, the ASOs could maintain linkages with the parent institution through incubators or research collaborations (Heydebreck, 2000; Zomer et al., 2010).

Following what we have just discussed, it is clear the importance that these companies hold for regional development, as main assets of intellectual capital of the universities. Many researchers agree that intellectual capital has a significant importance for obtaining competitive advantages and create value (Stewart, 1999; Sudarsanam et al, 2003; Peltoniemi, 2006). Although knowledge management and intellectual capital mainly appeared in the context of private companies, in the last decade there was a growing interest to study these issues on public organizations, such as universities and research centres. This is mainly due to the fact that universities have as main goal the production and the dissemination of knowledge (Sanchez et al, 2006). Ramirez et al., (2013), argued that when referred to a university, the term intellectual capital is used to cover all the institution's non-tangible or non-physical assets, including processes, capacity for innovation, patents. The tacit knowledge of its members and their abilities, talents, skills, the recognition of society, its network of collaborators and contacts, are all elements of the intellectual capital. One of the main components of a university's intellectual capital is the relational capital. Relation capital is the intangible resources capable of generating value through the university's internal and external relations. This includes its relations with public and private partners, position in (social) networks, the brands, involvement of industry in training activities, collaborations with international research centres, international exchange of students, international recognition of universities, etc. (Leitner, 2004; Ramírez et al., 2007; Cañibano and Sánchez, 2008; Sánchez et al., 2009; Bezhani, 2010; Bodnár et al., 2010).

2.2. Academic spin-off weaknesses and Capital Market Union

However, some scholars have addressed the issues of growth difficulties that the academic spin-offs, and start-ups in general, encounter during the first stages of their life cycle (De Jong et al., 2006). They highlighted some weaknesses of ASOs such as no interest in planning activities (De Jong et al., 2006) and a low capacity for self-criticism of the management and/or the individual project (Colombo et al., 2008; Van Geenhuizen et al. 2009; Galati et al. 2016). In fact, they guide the activities with a logic of improvisation; the new entrepreneurs, often of scientific and technical training, have poor managerial culture, especially in financial planning, avoiding R&D investments. Because of the low-development of "financial culture" they have to survive with modest financial resources (Colombo et al., 2008). They do not consider the strategical and critical role of working capital management, so they live in an unstable financial equilibrium, border line, frequently feeding an insolvent state. They finance their activity with short-time bank debt of more than 75%! As we highlighted before, small and medium-sized unlisted companies could have difficulty obtaining traditional financing through bank long-term loans and they do not have access to capital through the stock markets. Some research has found, in fact, that the innovative new businesses, while being lively and bearers of value to the economic system, has a high mortality, especially in the first years of life, or it survives under limited conditions. High-tech academic spin-offs, especially, tend to remain small for a long time or to grow slowly (Salvador 2006; Clarysse et al. 2011, Galati et al. 2016). The EU states that "about 50% of new businesses fail during their first five years as businesses often lack an appropriate ecosystem that will enable them to grow" (COM(2012) 795 final). The European strategy is to promote new businesses, but also to support their growth and resilience (COM:2012:0795).

To safeguard and enhance the competitiveness of SMEs in the EU economy, the European Commission has already adopted a clear strategy with Small Business Act for Europe (SBA - June 2008) and communication on Long-Term Financing of the European Economy (March 2014).

One of the main objectives of the "Europe 2020 Strategy" (March 2013) is to ensure SMEs have full access to the credit markets and capital in Europe. Capital Markets Union (CMU) aims to expand the range of financing options for the growing business, which include the ASOs.

Although the CMU is an initiative whose goal is structurally to change the capital market in Europe, it aims to achieve certain objectives in the shorter term. The priority for the short term development (up to 2019) is to increase resources for innovation, for innovative start-ups and for non-listed companies. The European Commission explains in the "Action Plan on Building a Capital Markets Union" (2015), how it intends to achieve this:

1. By encouraging venture capital (through tax incentives) and raising equity capital through a reduction of listing costs. Already in the action plan 2015, the European Commission has identified several goals to achieve by 2016 in the *"Financing for innovation, start-ups and non-listed companies"*. Among the first steps, there is just the support of venture capital system through pan-European venture capital fund-of-funds and multi-country funds. In this direction, the revision of EuVECA and EuSEF legislation and the tax incentives for venture capital and business angel are inserted.
2. To overcome information barriers to SMEs investment. According to bank information on declining SMEs credit applications, this step has the aim to map the existing local and national support and advisory capacities across the EU to promote best practices
3. By promoting innovative forms of corporate financing, like crowdfunding, and by developing a coordinated approach to loan origination by funds.

Another goal is to reduce barriers for companies to enter and raise capital on public markets. This objective is possible through a revision of the regulatory barriers to SMEs admission on public markets and SMEs growth markets.

According to the lively debate in literature about the role of start-ups, and ASOs, for university relational capital and for the economic system, the aim of this paper is to analyze and measure the benefits that these kind of firms could produce in the regional area. This is a response to a gap in the literature, which has so far focused only on a descriptive analysis. The study is completed with the discussion on the weaknesses for the growth of the ASOs and as the CMU actions can create opportunities for them.

3. METHODOLOGY

In the previous parts, we have discussed the different positions that scholars have about the benefits that Academic Spin-offs can produce on local economies, especially as a driver of relation capital of the university. Different European universities are starting to manage relational capital and to measure its value (Ramirez et al., 2007; Wen-Min, 2012; Perez et al., 2015; Secundo et al., 2015). The University of Pisa has promoted a research to evaluate the relational capital value[8]; one of the sub research units[9] has to focus on the study of the

[8] Academic Research Project (PRA), The relational capital in the university management, under the responsibility of Prof. Luciano Marchi.

[9] This part of the research project, "ASOs' Value in the relational capital of the university of Pisa", is under the responsibility of the Ada Carlesi and Giovanna Mariani.

Academic spin-offs contribution to relation capital and to evaluate the intangibles value for their growth.

This part of the research project was developed in three steps: 1) sending the questionnaire 1, to draw the profile of the sample and to evaluate part of the direct benefits; 2) analyzing financial documents; 3) sending the questionnaire 2, to measure indirect benefits and intangibles assets (research projects details, human resource details, patents, research awards and scientific networks). In Appendix 1 we describe the variables of the research.

Purpose of the questionnaire 1 is to draw a profile of the companies in the sample and to assess part of the direct benefits arising from their presence on the territory. The questionnaire 1 aims to obtain general information about the company such as the type of activity, number of shareholders and its education, the sales achieved in the last five years, the number of total employees and R&D employees (Appendix 2).

The questionnaire 2, instead, is more specific and it is structured in two parts. One part aims to obtain information about the indirect benefits and the intangible components of the company (such as research projects in progress, the number of patents and awards won, the number of participation in conferences or associations, the number of partnerships with other organizations, the type of training conducted on employees (Appendix 3).

The University of Pisa has acknowledged 30 companies (31th December 2014), of which 17 have started from 2011 (on average 4 spin-offs per year). Of 30 Pisa University spin-offs, 13 answered the questionnaire 1 and provided the requested information. The sample is composed of the well structured spin-offs (whose names are omitted in order to preserve their anonymity), with different characteristics regarding age, industry, type of activity. With the analysis of the balance sheets (2014), the aim was to highlight financial conditions to outline a snapshot of the companies' health. In the previous parts, we discussed about one of the major weaknesses of ASOs, the low development of the financial culture, which could produce a real brake on their development. To define the financial management ability of our sample, we observe some ratios of debts and of working capital management (Table 3).

Especially in period of the credit crunch, it is important to remember that working capital might be an alternative source of finance rather than debt financing. Working capital is an important driver for the health of the company, it is the expression of the ability of the business to meet its commitments in the short term and to achieve its objectives in the medium-long term (Mariani, 2007, 2008). The research team completed the analysis with the questionnaire 2, to capture the indirect effects generated in the local area, the difficulties in growing they met during their first stages of life, but especially to bring out the intangible aspects of the enterprise value. In the academic spin-offs enterprise value estimation, knowledge, research projects, patents, scientific network but especially the quality of the researchers play a strategic role (Mitchell et al., 1988; Coldrick et al., 2005).

4. RESULTS

The findings are explained below in two different sections. In the first one, we focused on the evidence related to the financial management quality of the Pisa University Spin-offs; in the second section, we summarize some conclusions related to the benefits that these firms bring to the regional area, that is composed of Pisa, Livorno, Lucca and Massa Carrara.

The spin-offs in the sample (Table 2) operate in different innovative industries and they have an average age of 3 years at 2014.

Table 2. Overview of the sample characteristics

Spin-off	*Sector*	*Year of birth*
A	R&S Engineering	2007
B	Life	2013
C	Life	2012
D	ICT	2014
E	ICT	2013
F	R&S Engineering	2011
G	Advanced Instruments	2003
H	ICT	2006
I	New Materials	2011
L	Advanced Instruments	2011
M	R&S Engineering	2011
N	R&S Engineering	2009
O	Advanced Instruments	2011

Source: Authors' elaboration

About the financial management quality, we have analyzed some debt and working capital ratios (Table 3). In this context, it is important to stress that because of the start-ups' possibility to elaborate condensed financial statements and the frequent lack of data produce a difficult financial ratio analysis and less expressive. In Table 3, indeed, it is possible note that some information are not available or they present abnormal configuration. To test the effectiveness of the lack on capital resources to invest in R&D and the quality of financial management, we use the leverage ratio "Debt/Equity" and the "coverage of the interest expenses" (Interest expenses/EBIT – Table 3).

Table 3. Pisa University spin-offs data (2014)

Spin-off	Sector	Year of Birth	Sales	Leverage Ratio* (%)	Interest expenses/EBIT (%)	Short term debt /Total debt (%)	R&D expenses	Working Capital** (days)
A	R&S Engineering	2007	€392.446	189%	27%	92%	€56.550	n.d.
B	Life	2013	€28.150	0%	0%	24%	€30.000	n.d.
C	Life	2012	€27.930	0%	0%	100%	€13.491	n.d.
D	ICT	2014	€37.750	0%	0%	100%	€7.138	n.d.
E	ICT	2013	€0	n.e	n.e.	15%	€10.435	n.d.
F	R&S Engineering	2011	€100.738	0%	0%	100%	€10.000	-35
G	Advanced Instruments	2003	€103.544	54%	n.e.	100%	€11.000	97
H	ICT	2006	€736.647	89%	10%	76%	€409.000	86
I	New Materials	2011	€106.740	235%	24%	11%	€15.000	39
L	Advanced Instruments	2011	€102.508	36%	1%	100%	n.d.	-43
M	R&S Engineering	2011	€83.896	1%	1%	100%	n.d.	n.d.
N	R&S Engineering	2009	€16.639	1%	0%	100%	€3.000	123
O	Advanced Instruments	2011	€576.918	30%	0%	91%	€341.707	79
	Total		*€2.313.906*				*€907.321*	

Source: Authors' elaboration

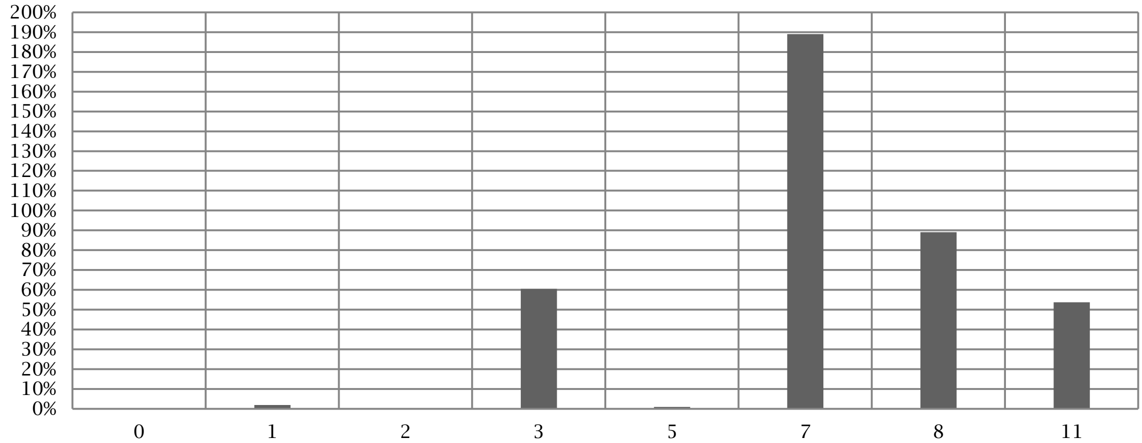
** The data "n.e" expresses the situation in which the company has a negative EBIT while a value of 0% of the Leverage ratio indicates no debt*

*** "n.d." indicates the absence of information, both in the AIDA database that in the financial statements of the company, about the working capital items*

Concerning the leverage, as shown in the Figure 1, under 3 years of life, the spin-offs live debt-free. In this first stage, the financial need is low and it is fed by R&D investments, frequently developed in the university laboratories, freely available for the researchers.

However, after the third year of life, the financial need grows for important investments in R&D, that the well-structured ASOs have to manage in their own laboratories, with companies' researchers. In this situation, the companies begin to finance with bank debts and in the ASOs of the sample, seven years of activity or more, the leverage becomes very high. These innovative ASOs have reached a good level of activities, are more structured, with some first corporate governance traits, they have to finance the upgrading of the existing assets and also enable an effective development.

Figure 1. Representation of the level of Leverage Ratio by age of the firm (2014)



Source: Authors' elaboration

In these companies the financial debt is essential of short term (92%, 100% and 76%), but the "senior ASOs[10]" (in 2014 spin-offs N, A, H, G had more than 5 years) have the opportunity to manage probably preferential financing and, in every case, they are able to contain the economic effects. The Interest expense/Ebit measures the company's ability to service its current debts by comparing its net operating income. In the "senior ASOs", on average, less than 30% of the Ebit is absorbed by the Debt costs, expressing a small derivative risk. We noted some companies with essentially preferential financing without debt costs (spin-offs B, C, D, F, N, O).

According to some studies for SMEs, our data confirm the preference of the ASOs for short-term debt to finance research and development activities. In this situation, the companies realize an Ebit able

[10] As you can see from Table 2, at year of financial data (2014) the spin-off with had less than three years are: D, B, E, C while "senior spin-offs", N, A, H, G have more than 5 years.

to cover the debt costs, which are low for preferential financing. They have, however, to monitor the future Ebit and, in every situation, the general mismatching between the long-term investments in R&D, with uncertain returns, and the short-term liabilities could be the start for financial imbalances for Academic spin-offs.

Also in relation to working capital management, only the "senior companies" express information. In the other companies, especially for the "younger", the more condensed financial statement doesn't give information about the working capital values. This aspect shows that in the early stages of life, companies do not use debt for financing the R&D activities, but at the same time, they do not care about their working capital. In any case, also the companies in which we have information about the working capital, during the interviews for questionnaire 2, the management expresses no strategic interest. As a result, in the ASOs of the sample, a low interest for financial management, mostly due to a poor managerial culture, clearly shows. Against this backdrop, it is so interesting also to mention the information about the managerial skills of the personnel. This shows that only 46% of the spin-offs have given managerial training to the personnel, while 62 % have employees with economic education (Table 4).

Table 4. Representation of Managerial skills variables

Spin-off	*Sector*	*Age*	*Managerial Training* (Yes=1; No=0)*	*Figures with managerial skills** (Yes=1; No=0)*
A	R&S Engineering	2007	0	0
B	Life	2013	1	1
C	Life	2012	1	1
D	ICT	2014	0	1
E	ICT	2013	0	1
F	R&S Engineering	2011	1	1
G	Advanced Instruments	2003	0	0
H	ICT	2006	1	1
I	New Materials	2011	0	0
L	Advanced Instruments	2011	0	0
M	R&S Engineering	2011	1	1
N	R&S Engineering	2009	0	0
O	Advanced Instruments	2011	1	1

Source: Authors' elaboration

** Variable "Managerial training" indicates the spin-offs' promotion of managerial training within the firm. If his value is 1 indicates that firm promote managerial training, if not, assume value 0*

*** Variable "Figures with managerial skills" indicates the presence within the staff of figures with managerial education. If its value is 1, it indicates the presence in the firm of person with Managerial education while 0 indicates their absence*

In relation to the benefits that the spin-offs generated in the local area, in this study we analyze the direct effects. As above mentioned in this study, we focused on the direct and indirect effects generated in the cities of Pisa, Livorno, Lucca and Massa Carrara, due to the aim of the research project. Data are presented, in this case, in an aggregate form, also because the dimension of the direct benefits has significance only if expressed as a cluster. It's possible to draw attention to some important results (Table 5).

Table 5. Direct and Indirect effects on the local area

Direct Benefits	
Sales (2014)	€2.313.906
R&D expenditure (2014)*	€907.321
Job created (from 2010 to 2014)	50 new high-tech jobs
Indirect Benefits (from 2010 to 2014)	
Number of Grants	18
Registered patents	15
Number of projects won	47

Source: Authors' elaboration

** R&D expenditure has a double effect. As expenditure they produces direct benefit, as investment they are assets because fertilize the know-how of these innovative companies and produce a technological development in the regional area*

Related to the innovation of the local area, Pisa University spin-offs spent about 907.321 euros in Research and Development activities. In only 13 ASOs they were able to realize 15 new patents and to win 18 awards for innovation; they have promoted and/or are partners in 47 projects, both Italian and European. Related to employment, spin-offs between 2010 and 2014 have created about 50 new jobs in the regional area. The Pisa University spin-offs generated sales of about 2,313,906 Euro in 2014, fourteen times the value of those in 2010.

5. CONCLUSIONS

In this paper, we have sought to give empirical evidence of the main constraints of academic spin-offs growth and the benefits they bring to their regional area. In these first results of the research, we highlight some important benefits, which our sample of ASOs have been able to generate, only in four years. Our sample represented around the 50% of the Pisa University Spin-offs, on the 31st December 2014, but they are the most active businesses, with entrepreneurs that show more interest and are more collaborative. They have been able to realize some important benefits in term of sales, but especially as drivers of employment, with 50 new jobs, essentially scientists, with an high know-how. As it is seen in some studies (Edvinsson and Malone, 1997; Jacbonsen et al. 2005), the universities are investing in intellectual capital, where human resource capabilities and innovative capabilities are strategic. In this direction, our ASOs share new innovations, patents and international networks: more specifically, they are fertilizing their expansion option. In respect of the scientific successes, as academic researchers, there is no doubt; for enterprise value there is light and shade. As above mentioned, literature and policy makers drew attention to the criticisms of start-ups, such as a chronic small-scale, with growth difficulties and with high failure rates. They have trouble to promote metamorphosis from researcher to innovative entrepreneur. The companies of our sample are a classical example of this situation. In the first five years, they are struggling to give an important impetus to their activity, but only focused on research. The turnover trend is slow, atypical for innovative industries. More specifically, in our ASOs financial management and planning culture are still missing.

Global Entrepreneurship Monitor underlines this challenge and CMU's first action is to favor an easier access to financing of start-ups for research and their development.

We have to draw attention to the consideration that the success of this CMU aim needs previous concentration on entrepreneurship training, especially on financial management culture. The information asymmetry between SMEs and investors represents an impediment to any new financing instruments diffusion.

Start-ups' focus is on the research, the publication of innovative findings in conferences and reaching an international reputation. They are completely disinterested in problematic management, which they prefer to delegate to external advisors.

Some policy makers and practitioners have highlighted the important role, which CMU could have by promoting "financing for innovation", but they are reflecting on a previous need, pioneering best practices in financial planning stimulation in start-ups management. Start-ups have to remove the chronic "information knots" that characterize the relationship with institutional investors. This also the opinion of some experts[11], who have declared that the first CMU goal should be to train the start-ups to realize a financial planning, especially by managing an adequate financial structure, with less short term bank debts. The R&D investments generate cash flows in the medium long term so start-ups have to finance with long-term funds, of different nature (equity and debt). They have emphasized the CMU position for venture capital and equity financing for the start-ups and foreshadows a cooperation between regional and national development banks. The national development bank should co-finance R&D projects, while the regional bank could have the specialization to support short financial needs. With a lively R&D activity, the ASOs could become a strategic asset in the university intellectual capital.

In this debate, what role could the university system play to increase intellectual capital value? The universities has promoted the 3rd mission, technology transfer, with a policy of new businesses, of academic spin-offs (ASOs), but they have to support innovative scientists to become entrepreneurs, with a managerial skill set to collaborate with financial system and to promote a corporate governance able to compete with international markets.

This work is a first step in the overall research, a work in progress. In the next steps of our study, we have to involve the other 13 ASOs to complete the observation.

The novelty of this study is define better and measure the ASOs benefits on the local area and propose the role of ASOs as asset of intellectual capital of the universities. Lastly, we attempt to discuss the ASO weaknesses and the limit of Capital market Union for this kind of companies.

The definitive aim of the study is, already, to define a model to measure the relational capital. In this direction, could be interesting elaborate case studies to get a better view on intangible assets.

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APPENDICES

Appendix 1. The variables of the research

Variable	*Description*	*Source*
Age	Age of the firm.	AIDA
Sales	Total revenues in the fiscal year.	AIDA
Leverage Ratio	(Long Term Debt + Short Term Debt & Current Portion of Long Term Debt)/ Common Equity.	AIDA (if not available, calculated from balance sheet data).
Interest expenses/EBIT	Expresses the company's ability to cover interest expenses with its core business. Interest expenses represent the cost of debt.	AIDA (if not available, calculated from balance sheet data).
Short term debt/Total debt	Expresses the percentage of short term financial debt on total financial debt.	AIDA (if not available, calculated from balance sheet data).
R&D expenses	Total Research and Development expenses in the fiscal year.	Interview.
Working Capital	It is a measure of company's efficiency and its short-term financial health (Working Capital = Current Assets - Current Liabilities)	AIDA (if not available, calculated from balance sheet data).
Managerial Training	Variable that measures the managerial skills in the company through the implementation of management training courses. Takes value 1 if the company has done management training, 0 if not.	Interview
Figures with managerial skills	Variable that measures the presence of managerial figures in the company. Takes value 1 if there are figures with managerial skills, while 0 indicates its absence.	Interview

Source: Authors' elaboration

Appendix 2. Questionnaire 1 (General information about the company)

Person Interviewed Date

Interviewer

1. Activity

---

2. Year of birth __________________
3. ATECO code __________________
4. Shareholders:

Name and Surname	Percentage of Shares (%)	Role within company	Education

5. Corporate changes from the year of constitution
   □Yes
   □No

6. If yes, complete the following table:

Year	Kind of change

7. Information about the company

Year	Sales	R&S Expenses	N° of employees	Gross salary	Net salary	Country	R&S employees	R&S employees gross salary

Appendix 3. Questionnaire 2 (Detailed information about companies)

Person Interviewed Date

Interviewer

1. In the last two years your research unit has committed (indicate the change compared to the previous year):

	Unit	Variation	Salary	Variation	Country	Kind of collaboration
Professor						
Researcher						
PhD						
Research fellows						
Technical staff						
Foreign staff						
Other staff						

2. The company has won research projects during the period 2010-2014?
   □ Yes
   □ No

3. Description

Kind of project	Role in the project	Organization	Year	Country	Loan for the project	Achieved results

4. With the research projects won, did you have the opportunity to buy tools?

	For research	For the trials	For teaching	For other uses
Under 1000 (Euros)	□	□	□	□
Between 1001-3000	□	□	□	□
Between 3001-5000	□	□	□	□
Between 5001-7000	□	□	□	□
Between 7001-10000	□	□	□	□
Over 10000 (Euros)	□	□	□	□

5. Purchases above were made using suppliers located in Region (indicate the city)?
Yes □ No □ City ____

6. If yes, for what percentage of the total amount?______________

7. Partnership with other organizations:

Organization	Country	Year	Kind of collaboration	Results obtained	Profit (Euros)

8. Patents and awards

Award	Patent	Year of filing	Book value of the patent

9. Are you developing new projects?

Period	Kind of project	In collaboration with	Country	Aim	Value of the project	Result of the project

10. Have you promote:

1-New products Yes □ No □
2-Scientific publications Yes □ No □
3-Other (description) ______________________________

11. If did not realized new patents, this is due to:

1 – lack of innovations subjected to patent
2 – technical difficulties
3 – bureaucratic difficulties
4 – Other (specify) ______________________________

12. Have you funded:

Kind	Period	Kind of collaboration	Department	Aim	Amount finances
Scholarships					
PhD Scholarships					
Research grants					
Contracts					
Instrumentation					
Training					
Other (specify)					

13. Have you promote staff training?
Yes □ No □
If yes, what kind? □ Managerial training □ Technical training □ Language training

14. The company participates in associations?
Yes □ No □

If yes, specify the number of associations in which the company participates ____________________

15. Paper presentation and participation in conferences over the past two years:

Year	Kind of conference	Country	Effects generated on the company

16. There are figures with managerial skills?
Yes □ No □
If yes, describe:

Role covered	Kind of education	Years of experience	Salary

THE PROCESS OF WOMEN EMPOWERMENT IN MICROFINANCE: DEFINITIONS, IMPLICATIONS AND DOWNSIDES

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Abstract

The present paper provides a review of the literature on women's empowerment. In particular, it explains women's empowerment and how it has been defined by various authors over time. It also aims at showing studies conducted on empowerment within microfinance and it reports research on the relevance of context. Finally, it reports research on the relevance of context as well as the negative aspects of women's empowerment. Further, this work points out some gaps in the literature and provides suggestions for future research. The authors advance two hypotheses that could be verified in the future, assuming that there are two levers, "additional resources/services availability" and "national patriarchal society", which act as mediating factors between the outreach of microfinance, or women and the actual impact on empowerment.

Keywords: Microfinance, Woman Empowerment, Additional Resources, Context, Mediating Factors
JEL Classification: G21, J16
DOI: 10.22495/cocv14i2c2p9

1. INTRODUCTION

In the 1970s the term 'women empowerment' appears for the first time, invoked by the feminist movement as something capable to restore the social justice (Batliwala, 1994; Stromquist, 1995; Bisnath and Elson, 2003; Mosedale, 2005). Bisnath and Elson (2003) explaining the concept of that period report: '[women empowerment] it was explicitly used to frame and facilitate the struggle for social justice and women's equality through a transformation of economic, social and political structures at national and international levels'. Starting from that first concept the women empowerment was progressively extended during the year underlining different aspects (cognitive, psychological, economic and political components) of the concept (Kabeer, 1999, 2001). Such as the enlarging opportunities of women' life choices (Rowlands 1995; Mayoux 1998; Kabeer 1999; Mosedale 2005). The women empowerment is discussed as the process with allow an increase of the control of women over tangible and intangible resources, (Batliwala, 1994; Ravallion, 2001; Bennet, 2002), over decision-making process (Rowlands, 1995; Kabeer, 1999; Ravallion, 2001), the management of personal relationships (Carr, 2000). Even the women empowerment is a multidimensional concept, it could be identified basically in an increase in the ability of a person to make important decisions regarding different alternatives of life.

Microcredit turns out to be an important tool not just for the social inclusion and access to credit for poor, but also a significant vehicle for women empowerment in developing countries. The woman empowerment is the process by which women redefine and extend what is possible for them to be and do in situations where they have been restricted, compared to men (Moser, 1993).

Women, in the context of developing countries, are disadvantaged compared to men for different reasons: (1) they are unlikely to have access to credit (UN, 2010, Khan, Islam, Talukder and Khan, 2013), and so generally they are considered poorer than men, they are forced at home, concentrated in domestic activities and childcare (Ainon, 2009); (2) they have no bargaining power toward their husband and no voice in the decision making process regarding purchases or children education (Goetz, A. M., & Gupta, R. S. , 1996; Karim, K. R., & Law, C. K. , 2012); (3) they have little mobility and often they need to ask permission to their husbands also to visit friends or parents, they are victim of gender inequality and lack of employment opportunities (Westergaard, 1999), and ultimately women lack of relationships in the community where they live and they are not engaged in the social and political life of the society (Kabeer, 2005).

For their nature and very often due to their mission, microfinance institutions target women in order to empower them (Hashemi et al.; 1996; Kabeer 2001; Garikipati, 2008). The underlying reasons for the targeting women for microfinance institutions are multiple.

This paper provides a review of the literature on women empowerment. In particular, it explains women empowerment, and how it is defined by different authors over time. It also aims at showing studies conducted on empowerment within microfinance, and finally it reports research on the relevance of context and negative sides of women empowerment. Furthermore, this work points out some gaps in the literature and advices suggestions for future research. In this direction we have advanced two hypotheses that could be verified in the future. In fact, we assume that there are two levers, precisely "additional resources/services availability" and "national patriarchal society", which act as mediating factors between the outreach of microfinance, or women, and the actual impact on the empowerment.

The paper is structured as follow. In the next paragraph the role of microcredit in women's empowerment is discussed. Following the paper points out some gaps in the literature and offers suggestions for future research on mediating role of different variables in the relation between empowerment and performance. In this direction, the authors advance two hypotheses that could be verified in the future.

2. THE MULTIDIMENSIONAL STATUS OF WOMEN EMPOWERMENT

For Nelly Stromquist (1995), empowerment is a socio-political concept that includes cognitive, psychological, economic and political components. The cognitive component refers to women's understanding about the causes of their subordination, which involves the capability to go against cultural or social expectations and includes also knowledge about legal rights and sexuality. The psychological component regards the women believing that they can act at different levels, personal and social, to improve their condition through the development of self-esteem and confidence. For the economic aspect, she argues that, having access to work outside home increases the possibility of economic independence and autonomy in general from the domestic role. The political component instead focuses on acting collectively as a driver of social change.

Also Jo Rowlands (1995) underlines the importance of moving to action, considering empowerment as a process that enhances women's control over decision-making and increases the alternatives of life choices to improve their condition and role in the society and promote gender equity. She develops a model of women empowerment with three dimensions - personal, close relationships and collective, where at each level corresponds a series of factors that lead to changes and where a great importance is attributed to the local context. More specifically empowerment is considered as a process, analyzed in the context of social work and education where '[...] empowerment [...] involves some degree of personal development, but that this is not sufficient; and that it involves moving from insight to action' (Rowlands, 1997). Going forward chronologically, Mayoux (1998) refers to empowerment as a set of 'mutually reinforcing virtuous spirals' of increasing economic development and improved general wellbeing for women.

Then, one of the most cited definition of women empowerment is that of Kabeer (1999, 2001). She defines it as the process in which women challenge the existing norms and culture of the society in which they live to improve their well-being effectively. More precisely, Naila Kabeer, like Rowlands, suggests that empowerment gives the opportunity to make choices to women who did not have this ability before. This implies that only those which have been previously denied a right, such as the ability to choose between alternatives are the beneficiaries of empowerment, and also that the choices involved are strategic. Having analyzed a number of studies of women empowerment, Kabeer argues that empowerment is basically an increase in the ability of a person to make important decisions regarding different alternatives of life. Empowerment is seen as a procedure in which women are protagonists in appropriating those resources, such as information, that are normally scarce, and that limit their choices, in order to reach a better state of life (Ravallion, 2001).

From the institutional point of view, also UNIFEM (the United Nations Development Fund for Women) gives a definition of women's economic empowerment as 'having access to and control over the means to make a living on a sustainable and long term basis, and receiving the material benefits of this access and control'. Such a definition goes beyond short-term goals of increasing women's access to income and looks for longer term sustainable benefits, not only in terms of changes in the regulations that constrain women's participation in the development process, but also in terms of power relationships in the household, community and market levels (Carr, 2000).

The same conception is adopted by Bennet (2002), who describes empowerment as an increase in resources and capacities of different individuals or group of individuals that influence, in a positive way, life.

Mosedale (2005) defines women empowerment as the process by which women redefine and extend what is possible for them to be and do in situations where they have been restricted, compared to men, from being and doing. Or, in other words, women empowerment is the process by which women redefine gender roles in ways which extend their possibilities for being and doing. Moreover, she showed that, although there are different definitions of empowerment, however, it is possible to reduce them to four aspects, which seem to be generally accepted in the literature. Firstly, to be empowered one must have been disempowered, before or related to someone else. For example, women, as a group, are disempowered relative to men. Secondly, empowerment cannot be bestowed by a third party. Rather it depends by those who would like to be empowered to take actions to be able to reach it. Development agencies and other institutions, are therefore just the facilitators of this process, they can help women to become empowered. They may be able to create suitable conditions to empowerment but they are not the ones that can make it happen. Thirdly, definitions of empowerment usually include a general desire of people to change their life and to have more control over the decision making process. Reflections, analysis and action are involved in this process which may happen on an individual or a collective level. Finally empowerment is an 'ongoing process rather than a product. People are empowered, or disempowered, relative to others or, importantly, relative to themselves at a previous time' (Mosedale, 2005).

3. MICROCREDIT AND WOMAN EMPOWERMENT

The main causes of poverty in developing countries are generally identified in the scarcity of productive assets, the low work force participation rate and high rate of underemployment (Ainon, 2009). In those context women are generally victim of gender inequality and lack of employment opportunities, moreover, the rate of underemployment among women is high. In addition, the lucky event that woman has a salaried job, her salary are generally significantly lower than the equivalent work done by a man (Cain, Rokeya and Shamsunnahar, 1979; Westergaard, 1999; Rahman and Khandaker, 1994). Talking about numbers, of the 1.3 billion people living in poverty over the world, some 70 percent are women, suggesting an underlying system within cultures that favors men over women especially in accessing financial resources (UN, 2010). For instance in Bangladesh, a country in which microcredit is established, the resources mainly belong to men which results into an inequitable condition of women (Khan, Islam, Talukder, Khan, 2013); or in Pakistan, for example, women are totally deprived of power in financial and social spheres (Khan, Islam, Talukder, Khan, 2013). Women empowerment is therefore one of the key issues hotly debated in the context of developing countries round the globe.

As far as the women empowerment is concerned as one of the tools to counteract the weak situation of women in developing, microcredit works is historically considered as an important tool to empower women, as the rising evidence reports (Among others: Cain, Rokeya and Shamsunnahar, 1979; Kabeer, 1999, 2001, 2005; Swain and Wallentin, 2007; and Shekilango, 2012). Due to this specific social issues of microcredit, governmental and nongovernmental organizations in developing countries have introduced microcredit programs offering financial services especially targeted to women (Swain and Wallentin, 2007).

One of the recurring issues and question about women and microcredit regards the reasons why microcredit organizations target women as prospective clients. Some researchers answered to this question believing that investing in women’s capabilities empowers them to make choices, increases women’s resource that contributes to the well-being of the family who are more likely to share the benefits with others in their family, especially their children, and also contributes to greater economic growth and development of a country (Garikipati, 2008Hashemi et al., 1996; Kabeer, 2001; Khan, Islam, Talukder, Khan, 2013). Others scholars, showed that a growing number of microcredit institutions prefer women as credit clients because they are more reliable and trustworthy borrowers compared to men, which can increase their recovery rate (Rahman, 1999; Mayoux, 2002).

The effective impact of microcredit on woman empowerment in developing countries have been diverse and inconclusive. In 2005 Holvoet indicated that some studies and researchers are supportive of microfinance’s ability to generate a process of economic, social and political empowerment, others pointed out a deterioration of women’s overall well-being. More recently, Al-Amin, Hossain and Mathbor (2013) underlined that until today studies have found substantial impact on the process of women empowerment, others have registered very marginal effect, and sometimes, even cited for adverse effects. For these reasons, the authors discussed the importance of address to what extent and under what microcredit could be successful in women empowerment. Therefore, the argument about the relationship between microcredit and its ability to induce empowerment is controversial and evaluations of the effects of microfinance programs on women empowerment generate mixed results.

It seems clear that many women have improved their situations from increased access to and control over cash, but, at the same time, evidence also points out that it is not sufficient to have women as target to say that they will be empowered (Mayoux, 2002). Some studies indicate that microcredit participation improves women’s socioeconomic status, grows their self-esteem, and guarantees their wellbeing within the family (Ahmed et al., 2001; Hadi, 2001; Mahajabeen, 2008; Schurmann and Johnston, 2009; Salt, 2010). Another study supporting the empowerment effect, is conducted by Mizan (1994), who tried to judge the empowerment of women looking at the capacity of participation in decision making process. He conducted the research in two villages of Bangladesh to examine the role of microcredit in women empowerment in terms of participation in decision making process. Findings showed that loans offered by microcredit institutions are playing a great role in women empowerment. Hashemi, Schuler and Riley (1996) in the same context of rural Bangladesh, created an indicator based on eight criteria, trying to assess women empowerment: mobility, economic security, ability to make small purchases, large purchases, involvement in major households decisions, and relative freedom from the family, political and legal awareness, participation in public protests and political campaigns. Kabir, Rokeya, and Ishrat (2008) revealed that participation of women in the development programs brings them out of their homes and make them more exposed to the interaction with other women and to the contamination of different ideas Rahman, (1986; Robinson, 2001; and Davis, 2007).

Different researches carried in the context of women empowerment and microcredit showed that microcredit offered by institutions such as NGOs, banks, etc. resulted in poverty reduction, increased mobilization and enhanced networking among women who were previously constrained at their homes (Schuler and Hashemi, 1996; Carr, 1996; Pitt and Khandker, 1996). Moreover, the occasional meetings and the comparison with other women of the village have a positive effect also on the adoption of contraceptive methods and on decisions regarding the family size (Khan, Islam, Talukder, Khan, 2013).

So, the general empowerment of women could be subdivided into the economic empowerment, deriving from access to credit, familiar/personal empowerment and social/political empowerment, which includes all forms of meeting and interaction with the community and the society as a whole. These three components then lead to a general empowered state of women that improve not just women themselves, but also the living standard of their children and their family as a whole (AMR, 2001). Another repercussion of these changes can be found in the redefined power relation of men and women. Women in fact tend to exhibit more autonomy in the areas of basic need fulfillment such as education, food, health etc. It was observed that more than sixty percent of the women were able to take important decisions at their homes that before were deemed to be men's responsibility, like decisions according to the marriage of children or purchase and selling decisions (Chelston and Kuhn, 2002).

Even Pitt et al. (2006) in the same vein, indicated that microcredit programs lead to women taking a greater role in household decision making, having better access to financial resources, having greater social networks due to mobility and mutual interaction, more bargaining power with their husbands, and freedom of mobility. Amin et al. (1995) noted that women's participation in microcredit programs have contributed to their behavioral change regarding fertility and choices about the number of children. Also other studies (Mahmud, 2003; Kabeer, 1999) showed that participation of women in microcredit programs widens their horizon of movement beyond family.

4. HYPOTESES ON MEDIATING VARIABLES

In studies regarding women empowerment and microcredit an important issue is the role played by context and background in which microcredit programs took place and where the process of empowerment is supposed to exist, and also about the influence of the passing of time on the gender relations, on society and on its mechanisms.

In developing countries generally women are still primarily associated with their roles as daughters, wives and mothers, although in some places they are getting involved in the society day by day. For example, in Bangladesh, where a large number of microcredit institutions operates, currently, women are representative of approximately the 50 percent of the total population and most of them, who are employed in the workforce, are unskilled and illiterate (BBS, 2008). Women are more deprived than men. The reasons behind this condition are the lack of education, training and employment opportunities. To counteract this condition of backwardness there is a growing number of governmental and non governmental institutions, researchers and policy makers who realized that true development of the developing countries passes through the mobilization of women and their involvement in the development process as protagonists (Khan, Islam, Talukder, Khan, 2013).

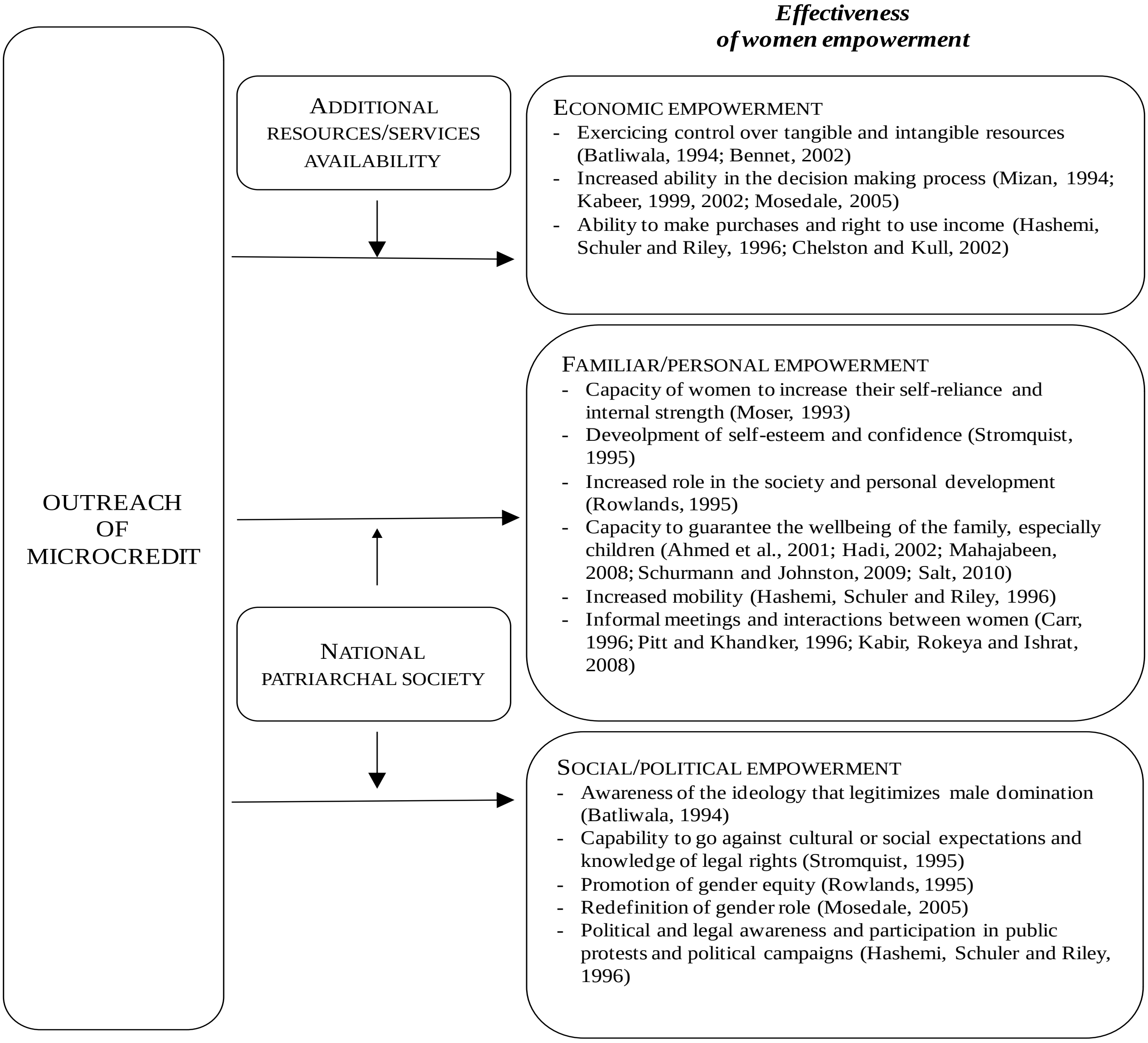
Moreover, the patriarchal ideology, spread in the developing countries, may prevent women from active microcredit participation. Patriarchal ideology is reflected in the gendered division of labour, in gender inequality and in the subordination of women (Bograd, 1988; Dobash and Dobash, 1977-1978, 1980; Yllo, 1983). Hence, the husband’s gender ideology may influence, in a negative way, both women’s microcredit participation and their changing status as household co-bread-winner (Goetz and Gupta, 1996).

Many scholars have stressed on cultural perspectives to explain women empowerment. In line with what was stated earlier about the importance of context, they found that social context has significant influence on women's lives and that the same interventions are not effective everywhere (Sardenberg, 2010). When we talk about context we consider different dimensions such as social, economic, political, perceptual and cultural, which have great influence on the empowerment process of a particular society. For this reason the evaluation of empowerment should not be based only on material interventions, but also on social network and relationships (Kabeer and Huq, 2010; Sardenberg, 2010). Malhotra, Schuler and Boender (2002), agree with the multidimensional process of empowerment, which for them includes economic, social and cultural, familiar/interpersonal, legal, political and psychological aspects.

Therefore, it is evident that empowerment is not merely change in economic well-being rather is an integrated process of social change in different forms and levels.

The following figure (Figure 1) illustrates the mediating role played by two factors in achieving respectively the economic empowerment, and both the familiar/personal empowerment and social/political empowerment.

Figure 1. Personal elaboration



4.1. Microcredit, additional resources and women empowerment

Having assumed that women are the strategic choice of providing loans but at the same they are not their end users, because it is the male members who really use and control the loans (Karim, 2008), it emerges another consequent implication. If it is true that women are not the end users, it is also true that in any case, they are responsible of returning the loans, and this helps to increase their level of stress and dependency (Rahman, 1999). Some credit institutions and organizations have put pressure upon women in case they fail to repay the instalments in due time, and moreover they verbally offend women in front of other peer groups for not making regular repayments (Rahman, 1999; Koenig et al., 2003).

A further different analysis is conducted by Haque and Yamao (2008), who with their research come to say that microcredit is not the suitable tool for poor women in Bangladesh, since it can empower only wealthier women who have already a certain level of income, land and assets at the moment of the loan request. Thus, credit is, of course, a way of empowerment, but it is not enough if combined efforts are not made in order to change the patriarchal social structure, the mentality and the gender power relations that are typical of the developing countries (Hashemi et al., 1996; Hossain et al., 2005; Drolet, 2010).

Another study by Garikipati (2008) pointed out that although lending to women benefits their families, its beneficial impact on women themselves is somewhat unclear. This turns out into a paradox, called "impact paradox". Garikipati examined the impact of microcredit in beneficiary households and on women in the regional district of Andra Pradesh, India. As previous researches (Hashemi et al., 1996; Hossain et al., 2005; Drolet, 2010), the result is that credit alone is unlikely to lead to women empowerment in terms of affecting her household position and allocation of her work time (Hunt and Kasynathan, 2001). The findings also support the idea that women may become empowered when credit is provided as part of an integrated package that includes, beyond the credit, other services like non-productive loans facilities, insurance, enterprise development, and welfare-related activities (Berger, 1989; Holvoet, 2005; Johnson and Rogaly, 1997; Mayoux, 2005).

Finally, Husain, Mukerjee, Dutta (2012) conducted an interesting study examining whether women become empowered after joining self-help groups (SHGs), or whether it is women who are already empowered that decide to join SHGs[12].

A potential barrier to the dissipation of benefits from SHGs among target households is that of self-selection. Self-selection occurs when members of a group have a kind of pre-disposition to choose certain outcomes. Since women have to decide to join a SHG or not, the movement is more likely to attract women who are already economically active, or are more empowered than others. As Steele et al. (1998) pointed out "High levels of empowerment among group members cannot be attributed to the program alone without controlling for the likelihood of selection bias".

Concerning the economic empowerment, we hypothesized that there is a factor which may influence its attainment and we called it "additional resources/services availability". We suppose that the increased access to resources and services, thanks to microcredit, favors women in reaching the economic empowerment, and in particular it enhances the ability to exercise control over those resources (Batliwala, 1994, Bennet, 2002), the ability in the decision-making process (Mizan, 1994; Kabeer, 1999, 2002; Mosedale, 2005) and the ability to make purchases (Hashemi, Schuler and Riley; 1996; Chelston and Kull; 2002).

This lead us to provide the first hypothesis:

Hypothesis 1: Additional resources/services availability have a positive impact on the economic empowerment of women.

4.2. Microcredit, national society and women empowerment

At first sight, and up to now, it would appear that everything in the process of empowerment generated by microcredit is delightful and enjoyable, without dark sides, but on closer inspection it may be argued that there are also some downsides.

In a recent study undertaken in India, Banerjee et al. (2009) showed that microfinance has no impact on participants' average monthly expenditure, per capita income, health, and education or family decision-making. In addition, Sugg's (2010) in his study, stated that 57% of female clients has suffered a rise in spousal verbal aggression since the start of their loans, and 13% in both verbal and physical violence.

Some studies agree with Sugg's (Goetz and Gupta, 1996; Rahman, 1999; Hossain et al., 2005) noting that providing financial support to rural poor women in the majority of cases, is not sufficient to empower them, rather it increases episodes of tensions within families and intensify domestic violence since many of the female borrowers actually have no control over loan use and consequently face problems in paying off the loans. Indeed, some other studies stated that women's microcredit participation increases the family conflict since it threatens men's traditional patriarchal authority (Hossain, 2002; Meade, 2010; Schuler et al., 1996, 1998). A significant proportion of loans that are borrowed by married women are actually controlled by their husbands (Goetz and Gupta, 1996; Kabeer, 2001). Therefore, women's loan-borrowing status may not necessarily improve their income and status. This might be related to the patriarchal gender ideology which is dominant in the developing countries, where men are expected to be the household breadwinners (Baden et al., 1994; Cain et al., 1979; Schuler et al., 2008). Therefore the husband's gender ideology might influence the levels of women's microcredit participation and the control over loans. In this regard the study by Karim and Law (2012) examines the influence of the husbands' gender ideology on women's microcredit participation and their status within the household in rural Bangladesh. Their findings showed that women's microcredit participation allows a redefinition of women's typical gender roles in rural Bangladesh since it proposes women to be co-breadwinners of the households, thus reversing the traditional patterns and the common mentality. On the same subject, Kroska (2000, 2007) defines gender ideology and its role in the process of empowerment, as people's attitudes toward gender specific roles, rights, and responsibilities (Kroska, 2000, 2007). She therefore highlighted that, in a conservative gender ideology, men are expected to fulfill their family roles through bread-winning activities and women instead are expected to fulfill their roles through homemaking and care-taking activities; while in a liberal ideology both women and men are expected to share bread-winning and care-taking activities.

As a matter of fact the national patriarchal society seems to hinder women empowerment, in order to maintain the traditional societal structure, in which women do not have the same rights and possibilities as men, but, simultaneously it becomes a motivational push for women to take action to obtain those rights and opportunities that they deny them.

Trying to fight against a patriarchal society and mentality, women, thanks to microcredit loans, develop a sense of self-esteem and confidence (Stromquist, 1995) and increases their internal strength (Moser, 1993) on the personal side of empowerment. For the familiar empowerment, women are better able to express their opinion regarding the general well-being of the family, and in particular on children's life, which normally in a patriarchal family does not happen, or just seldom (Ahmed et al., 2001; Hadi, 2002; Mahajabeen, 2008; Schurmann and Johnston, 2009; Salt, 2010). Moreover the increased opportunities to meet other women (Carr, 1996; Pitt and Khandker, 1996; Kabir, Rokeya and Ishrat, 2008) and also the greater mobility (Hashemi, Schuler and Riley; 1996) allow them to take more conscience of their rights as women within the family and society.

At the same time the national patriarchal society may have repercussions on the social/political empowerment of women. As previously mentioned, women gain greater

[12] Self-help groups (SHGs) are informal associations consisting of 10/20 members created for the purpose of enabling members to collect economic benefit through mutual help, solidarity and joint responsibility. The group based approach makes poor women able to accumulate capital in the form of small savings and promotes their access to formal credit facilities (Shylendra, 1998).

awareness of their position in the society in which they live (Batliwala, 1994) and try to act to undermine the masculine mentality and redefine traditional male and female roles (Stromquist, 1995; Mosedale, 2005), promoting gender equity (Rowlands, 1995).

All these considerations let us elaborate the second hypothesis:

Hypothesis 2: National patriarchal society has an impact on the familiar/personal empowerment and on the social/political empowerment of women.

5. CONCLUSION

As the amount of literature shows, women empowerment is an important debated issue.

Many authors over the years have discussed this phenomenon, some of which have shown that microcredit can be a particularly useful tool in achieving women's empowerment (Cain, Rokeya and Shamsunnahar, 1979; Kabeer, 1999, 2001, 2005; Swain and Wallentin, 2007; Shekilango, 2012).

Already in 2005, Mosedale had highlighted how women empowerment had become a buzzword, which was mentioned constantly, often inappropriately, without actually evaluating the improvement of the living conditions of women receiving microcredit.

Starting from this consideration we have identified for further research two gaps in particular in the literature, and also suggested hypotheses that would be worth exploring. One possible and significant field of research could be the attempt to find indicators standardized and universal for the measurement and evaluation of empowerment, which up to now are rather inconsistent. This would avoid inadequate evaluations of women empowerment and would lead to the ability to make comparisons on the basis of reliable indicators recognized by all as valid.

The second interesting line of research, that up to now is not covered by the existing literature, may be to investigate the phenomenon of women empowerment in the context of developed countries. More in details, it could be relevant to verify what is meant by women empowerment in a context that is completely different from the developing countries and with different problems and dynamics involving women. As a matter of fact, even if women in the western world are not generally in situations of extreme poverty, they are considered more fragile and vulnerable than men, and so in need of protection.

The third and last suggestion for future research derives from our tempt to configure the literature in a new way. In particular we have hypothesized that two dimensions are involved and affect the empowerment of women: "Additional resources/services availability" and "National patriarchal society". We suppose that the first one favors women in reaching the economic empowerment, by enhancing the ability to exercise control over the resources, making purchases and increasing the involvement in the decision making process. As for the second one, we have advanced the hypothesis that the patriarchal society, in which women live in most of the developing countries, could play an important role in the personal/familiar empowerment and social/political empowerment too. It may have a double push: on the one hand the patriarchal mentality could hinder the empowerment, on the other hand, however, it can also be considered as the spring that generates the desire to change and the drive for the empowerment of women. It would be interesting to test the relevance of these two dimensions in empirical studies and verify how they effectively influence the empowerment of women and in which way.

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THE FACTORS INFLUENCING AUDITOR INDEPENDENCE: THE PERCEPTIONS OF AUDITORS IN BAHRAIN

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Abstract

The aim of this research is to assess the relationship between the presumed AI influencing factors and AI from the standpoint of auditors in Bahrain. Researchers have continuously identified and assessed several factors that are expected to safeguard AI and objectivity to mitigate the potential threats faced by the audit profession worldwide. As a result of the promising Bahrain Economic Vision 2030 that emphasizes on 'fairness' as a one of major principle, the regulators in Bahrain are expected to adopt new measures that enhance the role of auditors in maintaining fairness and transparency. This research hence investigated the subject matter in a way that intended to assess the AI influencing factors in a Bahraini context. The research is quantitative in nature, whereby questionnaires were distributed to a range of auditors representing the audit firms in the Kingdom of Bahrain. Following reliability and validity tests, the responses were analyzed descriptively, along with empirical analysis through using the Multiple Regression Model. The findings signified the substantial role of the audit regulations and related provisions in enhancing AI and impartiality, when compared to other presumed factors. The research recommendations focused on the importance of overseeing the audit firms and accounting professionals through the formation of an independent audit quality board as well as considering the adoption of a joint-audit practice for the listed companies.

Keywords: Auditor Independence, Audit Quality, Audit Regulations, Non-Audit Services
JEL Classification: M42, M48
DOI: 10.22495/cocv14i2c2p10

1. INTRODUCTION

1.1. Research Background

Auditor Independence (AI) has become a debatable issue after many accounting scandals such as Enron, WorldCom, Satyam, and Tesco, which resulted in decreased confidence towards the auditors who were held partly responsible for frauds. While auditors had to detect material misstatements, fraudulent acts and errors to some extent, they deliberately contributed to concealing the illegal and fraudulent acts in those unfortunate occasions which raised deep concerns about their level of ethics and independence. Consequently, regulators all over the world have imposed more complex rules to govern both the audit firms and audit clients.

In Bahrain, the licensure and registration of auditors is the responsibility of the Ministry of Industry & Commerce (MOIC) through the Company Affairs Directorate. It is worth mentioning that auditor integrity and independence is deemed as a critical condition for auditors who wish to apply at the Auditors Registrar. According to Auditors Law (No. 26 of 1996), auditors shall satisfy the criteria of professional ethics, honor, integrity and public morals in order to be officially registered. Such quality standards consist of auditor independence, as it is seen as a key characteristics required for auditors. Currently, there are 22 auditing companies operating in Bahrain including the Big-4. Apart from MOIC, the Central Bank of Bahrain (CBB) has established a special 'Auditors and Accounting Standards Module' as part of its rulebook. The aim of this module is to present the accounting and auditing requirements that need to be met by financial institutions that are governed by CBB. In this regard, CBB obliges all financial institutions (including licensees) to obtain approval before appointing external auditors on annual basis. Whereas, CBB does not specify the basis and criteria for assigning auditing firms, yet it is observed that financial institutions are predominantly audited by the Big-4. Article 61(d) of the CBB Law enforces conditions for external auditors to be regarded independent. Financial institutions are required to take reasonable steps to ensure that the assigned auditor has the needed skills and experience to conduct the audit properly and is independent of the financial institution. Moreover, the rule states that financial institutions must notify CBB about incidents when auditors' independence is impaired. If the CBB believes that independence has not been met within a reasonable time frame, the CBB may require the engagement of a new auditor.

1.2. Statement of Problem

Whilst the audit profession is being officially regulated through the MOIC, the audit profession faces lack of monitoring, as it is in USA by the Public Company Accounting Oversight Board (PCAOB) and/or American Institute of Public Accountants (AICPA). Apart from that, the enforcement of the Amiri Decree (26) of 1996 is lacking due to inexistence of clear mechanisms for ensuring audit quality. It is therefore important to study the audit practices concerning independence and ethical behavior in more depth. Local research is quite limited in this field, which makes it difficult to determine if the present safeguards are sufficient to minimize threats to independence and improve the overall audit quality in Bahrain (Ali, 2014). Although the Auditor Affairs Committee and Auditors Disciplinary Board, appointed by the MOIC is ultimately responsible for the establishment of the auditing standards in Bahrain, the Bahraini law refers to pronouncements of the International Auditing and Assurance Board (IAASB) as the adopted auditing standards in the country.

1.3. Research Objectives

It aims to determine the factors that influence the auditors' independence by examining the current audit practices and identifying related strengths and threats. It will, further, evaluate the effectiveness of the present practices, regulations, cultural norms, apart from assessing the influence of such factors on AI. Eventually, the research will try to understand and evaluate the extent of the relationship between the influencing factors and the auditors' independence from their perspective.

1.4. Research Questions

The research will answer to the following questions as follows:

- What are the key factors that influence the auditors' independence in Bahrain?
- Do these factors adequately strengthen or constitute threat on AI in Bahrain?
- What is the extent of relationship existing between the AI influencing factors and AI in Bahrain? Which factors are more significant and how?

1.5. Significance of the Study

The fluctuating economic setting, financial crisis and political disturbances can have adverse impact on the business environment. It is therefore important to have proper accounting practices to assure stakeholders that financial information are truly and fairly disclosed and free from material misstatements. In order to achieve that, the principle of AI should be continually examined, investigated and updated because it sets the foundation of the audit practice. In other words, the whole audit profession can be regarded as ineffective if the AI principle is impaired or questionable. As a result of the promising Bahrain Economic Vision 2030 that emphasizes on 'fairness' as a one of major principle, the need for maintaining fairness and transparency through providing reliable financial and non-financial information to the public should significantly increase.

2. LITERATURE REVIEW

2.1. Auditing Significance

Historically, the need of auditing was explained through the Policeman theory that suggests that the auditor plays the role of the police officer by ensuring the accuracy of financial information, preventing and detecting fraud and financial misstatements. Robin and Peggy (1998) believed that the auditors' role is to actually detect fraud and ensure that the financial information is accurate. Ittonen (2010), however, asserts that there is a shift in the theory of auditing leading to more modern perceptions towards the profession.

2.2. AI as a Concept

Godfrey *et al.* (2003) stated that many companies are often challenged by the agency problem. While the risk of agency problem may be minimized by involving auditors in the process, Moore et al. (2006) contends that conflict of interest may still exist between auditors and shareholders, if auditors do not act in an independent manner. Mautz (1984) has defined the auditing profession as a special legislative franchise to provide independent financial audits for large organizations, while maintaining professional ethics. It further explains AI as an attitude that includes moral values of integrity, honesty and objectivity in a manner that makes the auditor free from the control of those whose records are being audited (clients). Porter *et al.* (2003) refers to it as the condition in which the auditor refrains from situations that make a reasonable person believe that his/her independent is impaired.

2.3. AI as an Audit Quality Tool

Audit quality is defined as "the probability that an auditor will both discover and report a breach in the client's accounting system". Based on this definition, it can be clearly noticed that audit quality does not only depend on the technical ability and accounting knowledge of the auditor, but it also relies on the level of AI through his/her ability to report any material irregularities (i.e. fraud, error). Whilst the International Standard on Quality Control (ISQC) discusses the responsibility of audit firms to maintain and document their internal quality control policies and procedures, the existence of the quality control measures and audit compliance bodies remain limited in in the Arab World. Arens et al., (2013) reveals that such measures are only applied in Saudi Arabia and Egypt, wherein they established a number of government bodies audit practice and quality report centers to ensure that audit firms are maintaining quality standards and consistently adhering to the ISAs, including auditor independence.

2.4. Audit Regulations

Moore *et al.* (2006) argue that establishment of new auditing regulations are mostly insufficient. They claim that reforms can be designed and implemented in a way to serve special interests.

Further, it refers to the example of the non-existence of a rule that specifies the maximum period of business between the audit firm and clients. The unlimited engagement period between the auditing firm and clients raises serious concerns about the auditors' independence in several countries, more recently in the case of Tesco's financial misstatement. Nonetheless, Nelson (2006) suggests that reforms need time to be implemented effectively, and that the outcomes of any regulations cannot be judged from single incidents. Many countries addressed this matter in their audit regulations in last couple of years.

2.5. Audit Committee as a Corporate Governance Mechanism

It is found in various researches that the establishment of audit committees is regarded as a key mechanism for corporate governance, which gained increasing attention. Joshi and Wakil (2004) inferred that the size of audited company, nature of industry and the audit firm itself have influenced the establishment of audit committees in Bahrain. Further they find that the formations of audit committees have been slow and not well-recognized in Bahrain. Nevertheless, the MOIC has issued a Cooperate Governance Code in 2011, in which it addressed and emphasized the function of audit committees in all operating joint stock companies. As per the code, its main aim is to supplement the existing Bahraini Commercial Companies Law, by incorporating additional corporate governance principles. Despite the fact that the existence of audit committees is currently mandatory in Bahrain, it is observed that some companies do not update their audit committee charter annually, mostly due to ignorance and insufficient legal enforcement mechanism.

2.6. Non-audit Services and Related Provisions

Whereas SEC (2003) rules clearly states that it is prohibited for any public accounting firm to perform Non-audit Services (NASs) in conjunction with audit. Law (2008) contends that NASs provisions and rules are inadequate to mitigate threats to AI. Even though performing NASs may impair auditors' independence, in fact, it is observed that analysts' perceptions of AI are not affected by NASs, which means that any *reasonable person* may not necessary deem such activity as a real threat to independence.

2.7. Mandatory Audit Rotation (MAR)

Dopuch *et al.* (2001) conducted a research to evaluate the effectiveness of MAR and found that the MAR results in enhancing AI. Moody *et al.* (2006) further assessed the scope of MAR and found that there is a difference between mandatory audit firm rotations compared to partner rotations. In this study, it was concluded that the existing partner rotations is less likely to improve AI. Said and Khasharmeh (2014) found that the majority of auditors agree that the rule of rotating audit partners every five years can safeguard AI. While the study revealed that there is a significant relationship between MAR and AI, the results indicated that the adoption of rotation rules did not receive considerable attention among audit firms in Bahrain.

2.8. Socio-cultural and Ethical Influences

Puxty *et al.,* (1997) stressed that laws and regulatory frameworks are insufficient in retaining AI among audit firms. They argue culture and socio-economic factors have significant influence over AI as a concept. Hudaib and Haniffa (2009) concluded that auditors view independence based on their social interactions at three levels consisting of the micro level (auditor's personal self-reflexivity, ethical values and reputation), meso level (the organizational culture of the audit firm itself) as well as the macro level (socio-economic and political structure of the country where the audit firm operates). Fan-Hua and Huang (2013) found that auditors are negatively associated with idealism in ethics. Instead, they are positively associated with relativism, due to the applied nature of the audit profession. They claim that relativist auditors are less likely to condemn wrongful acts of their clients, and hence the AI in theory is not idealistically reflected in practice.

2.9. Role of Internal Audit Function

It is found in many researches that firms that engage in greater internal monitoring through internal audit function (IAF) maintain greater level of internal control, financial statement reliability and compliance. Drent (2002) contends that managers perceive internal auditors to work for them; thereby internal auditors do not have to remain independent. Further, it is added that according to management influence theory, management merely perceives the IAF as a formality that satisfies the audit regulations and the corporate governance requirements. Munro and Stewart (2011) found that external auditors rely substantially on the clients' internal audit to assess internal control risks, and therefore may decrease the required level of substantive testing and evidence accumulation. Such dependence on IAF may, therefore, be considered as a threat to independence. Reckers and Lee (1997) noted that the Statement on Auditing Standard (SAS) 9 required external auditors to assess the objectivity and work quality of the internal auditors prior to relying on it. The standard lacked clear guidelines about methods and steps to be followed by external auditors to evaluate the competency of internal auditors, leaving the degree of dependence up to the critical judgment of the auditor. As a result of the debate and criticism, SAS 65 was issued in 1991 to assist external auditors in evaluating the objectivity and work performance of the internal auditors.

2.10. Economic Factors and the Influence of the Audit Fee

Al-Ajmi and Saudagaran (2011) revealed that the users of financial statements regarded economic factors as one of the main reasons for impairing AI, which ultimately decreases the reliability of the audit reports. Nevertheless, Ateya and Kukreja (2015) evaluated the perceptions of investment banks on the effectiveness of the audit reports in Bahrain and found that the audit report is still vital to Bahrain investment environment. Interestingly, Reynolds and Francis (2001) found that competition among audit firms put more pressure on auditors to maintain ethical behaviors, so as to maintain their reputation in the market and avoid litigation risks. In this regard, Srinivasan et al., (2002) conclude that there is a conflict of interest between auditing firms and their clients regarding audit quality and audit fees. Suparto (2011) conducted a study about the complexities of audit fee in Indonesia and found that there has been unhealthy rivalry amongst audit firms reflected through a price war strategy. With the aim of attracting more clients and dominate the market, auditors tend to offer low audit fees, which results in inferior audit quality and raises serious doubts about auditors' independence.

2.11. The Influence of the Audit Firm Size: Big 4 vs. Non-Big 4 Auditors

Al-Ajmi and Saudagaran (2011) concluded being a Big-4 is considered as an enhancing factor to AI, agreeing to the findings of previous studies. However, the study noted that this factor is considered as one of the least significant factors. Law (2008) found that there is no major difference between the perspectives of Big-4 and non-Big 4 auditors with regards to AI. Although such finding can indicate that AI is not affected by the auditing firm size from the perspective of auditors themselves, other key stakeholders may still believe that Big-4 companies maintain higher audit quality and AI levels.

3. METHODOLOGY

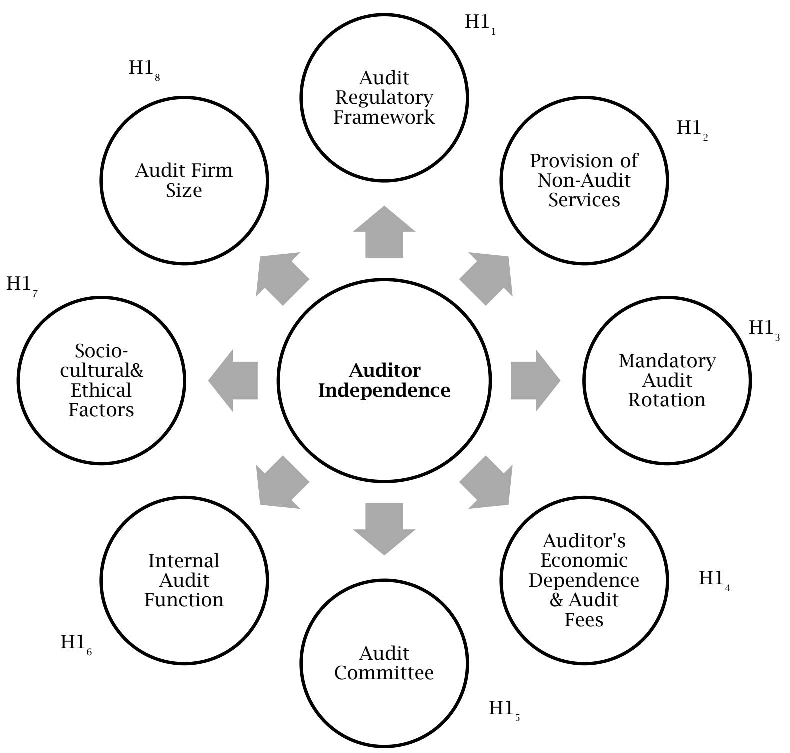
3.1. Research Approach (Design)

A detailed questionnaire was constructed to measure the extent of the AI influencing factors. Besides, its affordability and simplicity, one of the main reasons for selecting the questionnaire as a research tool is owing to its effectiveness in measuring the research variables statistically in a way that clearly demonstrates the conceptual framework. It consist of demographic-related questions about the auditors' gender, age, work experience, educational background, and professional qualifications as well as audit company type. After that, the questionnaire included statements about the research variables (i.e. AI influencing factors) in a Likert five scale format, whereby respondents were requested to indicate the level of agreement to a number of statements using a scale ranging from strongly agree (5) to strongly disagree (1).

3.2. Research Theoretical Framework

The influencing factors (*independent variables*) include the audit regulatory framework as well as other specific variables (i.e. provision of NASs, audit committee, audit firm size, auditor economic dependence and audit fees, socio-cultural & ethical factors, IAF, MAR). It is assumed that the earlier factors have effect on AI and objectivity (*dependent variable*). The following diagram illustrates the theoretical framework of the research in relation to AI by using a *factorial design.*

Figure 1. Research Theoretical Framework



3.3. Research Hypothesis

The hypotheses concerning the factors influencing AI were formed as follows:

H0: There is no significant relationship between the presumed *AI influencing factors* and AI in Bahrain.

H1: There is a significant relationship between the presumed *AI influencing factors* and AI in Bahrain.

More specifically, the sub alternative hypotheses that were tested in this research were:

Table 1. Research Hypothesis

$H1_1$: There is a significant relationship between the *audit regulatory framework* and AI in Bahrain.
$H1_2$: There is a significant relationship between the *provision of non-audit services* and AI in Bahrain
$H1_3$: There is a significant relationship between the *mandatory audit rotation* and AI in Bahrain
$H1_4$: There is a significant relationship between the *auditor economic dependence* and AI in Bahrain.
$H1_5$: There is a significant relationship between the *audit committees function* and AI in Bahrain.
$H1_6$: There is a significant relationship between the *internal audit function* and AI in Bahrain.
$H1_7$: There is a significant relationship between *socio-cultural factors* and AI in Bahrain.
$H1_8$: There is a significant relationship between the *auditing firm size* and AI in Bahrain.

3.4. Validity and Reliability

The questionnaire was designed to specifically address the research questions. The adopted research questionnaire was developed and test as pilot study and successfully tested in terms of validity and reliability, indicating high scores as Cronbach's alpha coefficients exceeded 0.6. The questions, however, were amended to fit the specific purposes of this research as well as to assure their relevance to the Bahraini business context and that they clearly reflect the findings of the theoretical framework.

A pilot study was carried out to ensure "construct validity", in which 10 questionnaires were initially distributed to amend any parts that caused confusion and misunderstanding of meanings or language terms. More specifically, a number of draft questionnaires were distributed to accounting academicians, auditors and statisticians, to ensure that the questions are relevant to the theoretical framework and can properly measure the research hypothesis. Generally, the questionnaire was deemed adequate to measure the intended objectives, after making few modifications in terms of sentence structure and formatting.

Apart from validity, the reliability (internal consistency) of the measure was thoroughly evaluated by testing the participants' responses, in which the questionnaire several questions measuring the same variable were integrated in the questionnaire. In this way, the answers of the participants were expected to be consistent, reasonable and free of conflicting responses.

In order to validate the reliability of the measure statistically, Cronbach's Alpha test was used through the SPSS to ensure that it exceeded 0.6 to signify a reasonably high reliability. The questionnaire items regarding each of the independent variables were tested and the results were as follows:

Table 2. Reliability Statistics for the Questionnaire Items

Variable	*Number of Items*	*Cronbach's Alpha*
Audit Regulatory Framework	7	0.743
Provision of Non-Audit Services	6	0.694
Auditor Rotation	4	0.681
Auditor's Economic Dependence and Audit Fee	5	0.779
Audit Committee	6	0.839
Internal Audit Function	4	0.761
Socio-cultural and Ethical Factors	3	0.879
Audit Firm Size	4	0.936

3.5. Sample Size Selection

Out of 1,530 official listed auditors representing the audit companies in Bahrain (LMRA, 2011), 307 auditors were represented in the sample size for the quantitative study in order to achieve 95% confidence level, and 5% confidence interval. The aim of applying the above scientific measures for sample size calculation was to provide reasonable assurance that the sample size fairly represents the population. For the purpose of this research, the non-probability sampling approach was utilized, wherein a mixture of convenience and snowball methods were particularly adopted. These methods were mainly selected due to their practicality, time efficiency, as well as the unavailability of the specific list of auditors operating in the audit firms. In order to reach the desired sample more efficiently, the questionnaires were distributed both electronically and as a hard copy to a number of auditors representing a variety of audit firms in Bahrain.

3.6. Data Collection and Analysis

The numerical data will be analyzed through SPSS, whereby the responses of the participants will be coded numerically in the software, followed by a descriptive statistics analysis. Subsequently, a multiple regression approach was applied to find out the correlation among variables and to test the research hypothesis.

4. FINDINGS AND ANALYSIS

4.1. Descriptive Analysis

The first part of the analysis was related to the demographic information followed by an in-depth descriptive study for the research variables. It is important to note, however, that the results of the descriptive analysis were not conclusive in nature, meaning that the research findings were only confirmed during the empirical analysis stage when more advanced statistical tools were incorporated for hypothesis testing.

4.1.1. Demographical Analysis

Out of the 307 respondents, 59% were males, while 41% were females. Moreover, 58.6% of the participants belong to big-4 audit firms, whereas 41.4% work in a non-big-4 audit firms. The representation of auditors from different audit companies was deemed important to highlight any possible similarities or differences in their views towards AI. The majority (64.5%) of the respondents were bachelor's degree holders, whereas 32.2% of the respondents were Master's degree holders. It is worth noting that 41.7% of the respondents hold one professional certificate, and 13% of the participants obtained two professional certificates, while 40.1% of the auditors represented in the sample have not earned any professional certificate (Appendix 1).

4.1.2. Analysis of Independent Variables

- *Audit Regulatory Framework*

The influence of the audit regulatory framework was measured through nine statements. 63.2% of the respondents agreed that the current framework in Bahrain is adequate to safeguard AI. While 15.6% of the respondents disagreed that the regulatory authority is an enhancing factor, 13.4% of the participants were undecided on whether the rules and regulations have a positive effect on AI. The overall mean of this statement was 3.515 indicating that respondents predominantly agree that the audit regulatory authority in Bahrain has a positive effect on AI.

In terms of the adoption of the ISAs and its impact on AI and objectivity, the vast majority of respondents either agreed (65.5%) or strongly agreed (27.7%) that the adoption of ISAs in Bahrain positively affects AI & objectivity. It is worth noting that the extent of auditors' consensus concerning this statement which equals 82.6% indicates that they have greater confidence on ISAs when compared to their local protocols. The participants consider the existence of an audit regulatory framework as a favorable factor, whereby the means of all the seven related statements were above 3.5 indicating noticeable agreements. The standard deviation of all seven statements was less than one, suggesting an overall consistency and low variation among responses (Appendix 2).

- *Provision for Non-Audit Services*

Interestingly, 72.3% of the respondents agreed that when an auditor provides NASs to the same audit client, the auditor may tend to be biased. On the other hand, only 6.2% disagreed that such adverse effect exists. Out of the total number of the participants, 63.2% agreed and 26.1% strongly agreed that when an auditor provides NASs to an existing audit client, the auditor may sacrifice his/her objectivity. Accordingly, 72.3% of the respondents agreed that the confidence in the auditor's ability to remain independent would be affected when an auditor provides NASs to an existing audit client. Nevertheless, when respondents were asked whether audit firms should be totally banned from providing NASs, 35.8% disagreed and 6.5% strongly disagreed that such action needs to be taken. While 46.9% agreed that audit firms should be totally banned from providing NASs, 9.4% of the respondents were neutral. The variations in responses are clearly evident by the mean of 3.007 (neutral) and the standard deviation of 1.0695. Moreover, 68.4% of the respondents agreed that if auditors were to provide NASs, such services should be offered to non-audit clients only. Overall, the responses indicate that NASs are mostly viewed as a threatening factor to AI (Appendix 3).

- *Auditor Rotation*

Of the total participants, 65.9% agreed that a lengthy relationship between an auditor & a client is a threat to AI & objectivity. Even though auditors agreed to a certain extent that a lengthy relationship between an auditor & a client is a threat to AI & objectivity, their opinions differed on whether audit partner rotation is the optimal safeguard in this respect. It is also noted that many past frauds such as Enron, WorldCom, Tesco and Satyam, happened where same auditor was conducting audit for very long period (Appendix 4).

- *Auditor's Economic Dependence and Audit Fee*

This variable was studied through five statements. 54.4% respondents agreed that the income from audit fees received from a single audit client could cause an audit firm to become economically dependent upon that client. Whilst 14.7% of the respondents were undecided, 10.1% of the respondents dis-agreed that audit fees results in economic dependence for audit firms. When analyzing the effect of audit fees and economic dependence on auditor independence, 45.6% of the respondents agreed that even though an audit firm is economically dependent upon its client, it could still maintain its independence & objectivity. This can be practically justified by the intense competition surrounding the audit market, wherein audit firms are thereby required to sustain their reputation through preserving a high level of audit quality and reliability (Appendix 5).

- *Audit Committees*

With reference to role of audit committees (ACs) as an AI safeguard, 62.2% of the respondents agreed that the main role of an audit committee of appointing & reappointing of the external auditors is expected to enhance AI & objectivity. Additionally, 14.7% strongly agreed that the main function of ACs can leads to safeguarding AI & objectivity, while 15.3% of the respondents disagreed that there is a significant relationship between the ACs function and AI. In terms of the specifications of the ACs function, the vast majority of respondents either strongly agreed or agreed that if one member of the audit committee has accounting & financial expertise, the audit committee will highly likely result in greater AI. Statistically, the average mean for this statement equals to 4.215 indicating an 84.3% agreement. Apart from that, the respondents believed that the second important ACs function that may safeguard AI is when it consists of a majority of independent & non-executive directors as key members in the audit committee, with an average mean of 4.212 (Appendix 6).

- *Internal Audit Function*

43.3% of the participants agreed that the existence of an internal audit function (IAF) safeguards the independence & objectivity. In this regard, 59.6% did not agree that external auditors rely on the findings of internal auditors in a way that can weaken their independence & objectivity (Appendix 7).

- *Socio-cultural & Ethical Factors*

58.3% of the respondents agreed that socio-cultural factors are positively correlated with AI &

objectivity. This suggests that the perceptions regarding AI depending on the cultural environment where auditors operate. For example, 46.3% of the respondents agreed that receiving gifts from clients compromises AI & objectivity. In relation to audit firm size, the respondents differed in their opinions in all four statements. More specifically, 52.4% of the respondents agreed that the size of the audit firm is positively associated with audit quality & independence, while 27.4% disagreed with the statement (Appendix 8).

4.1.3. Independent Two-Sample T-Test (Big-4 Audit Firms vs. Non Big-4 Audit Firms)

Table 3. Independent Two-Sample T-Test (Big-4 Audit Firms vs. Non Big-4 Audit Firms)

Variable	*Mean*		*Mean Difference*	*t*	*Sig (2-tailed)*
	Big-4 Audit Firm	*Non Big-4 Audit Firm*			
Audit Regulatory Framework	3.9857	3.7998	0.18594	3.213	0.001
Non-Audit Services Provision	3.8630	3.8031	0.05981	0.936	0.350
Mandatory Audit Rotation	3.4861	3.4252	0.06091	1.163	0.352
Auditor's Economic Dependence, Competition & Audit Fees	3.4211	3.5496	-0.1285	0.931	0.072
Audit Committee	3.9315	3.9396	-0.00815	-1.803	0.921
Internal Audit Function	2.8944	3.2500	-0.35556	-3.916	0.000
Socio-cultural& Ethical Factors	4.0722	3.6982	0.37406	3.454	0.001
Audit Firm Size	3.6319	2.937	0.69494	6.374	0.000

The table above aimed to explain the possible differences between Big-4 auditors and Non-big 4 auditors with regards to their perceptions about AI influencing factors.

With reference to regulatory authority, Big-4 auditor agreed that a relationship exists between regulatory authority and AI, signifying an average mean equal to 3.9857. However, the average mean for Non-big 4 auditors was equal to 3.7998 resulting in a mean difference of 0.18594. The significance value of 0.000 (less than 0.05) indicates that the Big-4 and Non-big 4 auditors were significantly different in terms of the regulatory framework variable. In this respect, the significant difference was in favor of the Big-4 auditors. One of the possible reasons for such difference in perceptions may be because big-4 auditors are highly involved in CBB related rules and guidelines, especially when auditing banks and large financial institutions. In other words, big-4 auditors may better appreciate the importance of the audit regulatory framework, since it is more applicable to their high-profile audit engagements.

The second variable that is NASs Provision had an average mean of 3.8630 for the responses of the Big-4 auditors, compared to an average mean 3.8031 for the responses of the Non-big 4 auditors, leading to mean difference of 0.05981. The significance level of 0.350, however, was not inadequate to conclude that there is a significant difference between Big-4 and Non-big 4 auditors concerning NASs Provision, as the significance level was higher than 0.05.

Likewise, the responses for the MAR variable showed an average mean of 3.4861 for Big-4 auditors compared to 3.4252 for Non-big 4 auditors, both of which were between neutral and agree ranges. Yet, the significance value of 0.352 (greater than 0.05) indicates insignificant difference in perceptions. This may be possibly due to auditors (both Big-4 and Non-Big 4) witnessing similar benefits and inadequacies in the current audit partner rotation, which results in parallel opinions in this matter.

Interestingly, "Audit Firm Size" variable was subject to significant differences in perceptions between Big-4 audit firms and Non-Big 4 audit firms. The average mean for Big-4 auditors was equal to 3.6319, compared Non-big 4 auditors with an average mean equal to of 2.937 resulting in a mean difference of 0.69494 and a significance level of 0.000. While Big-4 auditors generally agreed that the size of the audit firm is positively associated with audit quality & independence, Non-big 4 audit firms were neutral. The choice of the participants may incorporate potential bias towards the company that they work for in their responses.

4.2. Empirical Analysis

The multiple regression analysis was conducted to empirically examine the relationship between the dependent variables (i.e. presumed AI determinants) and AI.

The main reason for choosing the multiple regression model for this study was due to the fact the number of independent variables were eight in total, all of which are assumed to have influence on one dependent variable (i.e. auditor independence).

The following table illustrates the results for this analysis:

Table 4. Multiple Regressions (Model Summary, ANOVA, and Coefficients)

Multiple Regression Analysis Variable	*Beta*	*T-Test*	*Sig.*
Audit Regulatory Framework	0.192	7.769	0.000
Non-audit Services Provision	0.221	9.972	0.000
Mandatory Audit Rotation	0.041	2.122	0.035
Auditor's Economic Dependence, Competition & Audit Fees	0.168	7.83	0.000
Audit Committee	0.172	9.388	0.000
Internal Audit Function	0.144	10.592	0.000
Socio-cultural & Ethical Factors	0.135	10.388	0.000
Audit Firm Size	0.124	10.04	0.000
R	0.927		
R Squared	0.860		
F	22.871		
Sig (F)	0.000		

The multiple correlation coefficients (R) are equal to 0.927, indicating a strong positive relationship between the independent variables and the dependent variable. Such noticeable association between the dependent variables and AI has been evident in previous studies that were conducted in different jurisdiction. While the high value of R signified relatively good level of prediction, it is simply deemed a measure of strength, and not causation among variables.

The coefficient of determination (also referred as R Squared) is equal to 0.860, which describes the proportion of variance in the dependent variable (i.e. auditor independence) that can be explained by the independent variables (i.e. AI influencing factors). In this regards, the independent variables explain 86% of the variability of the dependent variable (i.e., auditor independence), while the remaining percentage of 14% are explained by other factors.

Based on the previous results, the factors were ranked according to their Betas as follows (i.e. the higher the variable beta, the greater the influence on Auditor independence):

Table 5. Ranked Unstandardized Coefficients (beta) for Independent Variables

Ranking	***Variable***	***beta***
1	Non-audit Services Provision	0.221
2	Audit Regulatory Framework	0.192
3	Audit Committee	0.172
4	Auditor's Economic Dependence, Competition & Audit Fees	0.168
5	Internal Audit Function	0.144
6	Socio-cultural & Ethical Factors	0.135
7	Audit Firm Size	0.124
8	Mandatory Audit Rotation	0.041

As illustrated in the figure above, the most influential factors affecting AI & objectivity were NASs Provision, Audit Regulatory Framework and the Audit Committee. These three variables ranked the top three in terms of beta values (0.221, 0.192, and 0.172 respectively). It is noteworthy that these variables have common characteristics, which is that they are all regulatory in nature. In other words, the results suggest that auditors perceive the existence of governing audit functions as a key safeguard to AI & objectivity. While this result does not necessarily indicate the adequacy of the entire regulatory framework, it still highlights the significant role of several audit functions (i.e. establishment of ACs, NASs provisions) in improving the overall audit quality.

Socio-cultural & Ethical Factors, Audit Firm Size as well as MAR were ranked in the last three positions, with beta values of 0.135, 0.124 and 0.041 correspondingly. One of the reasons why MAR was not regarded as a significant AI enhancing factor could be owing to the possibility that several auditors witnessed inadequacies concerning the mechanism and application of such practice. Potential weaknesses may include close relationships between audit firms and clients, which cannot be mitigated by merely rotating the audit partners. Apart from that, the relations among audit partners themselves may be associated with a high degree of nepotism affecting the credibility of audit rotation.

4.2.1. Hypothesis Testing

Based on the findings from the regression model, a definite conclusion can be reached with regards to the research hypothesis. If the significance level (p-value) is less than 0.05, it can be concluded that the coefficients are statistically significantly different to zero, meaning that the null hypothesis should be rejected. By applying the criteria, it is clearly demonstrated that the significance level (p-value) was equal 0.000 (less than 0.05) in relation to "Regulatory Authority", " NASs Provision", "Economic Dependence, Competition & Audit Fee", "IAF", "Socio-cultural & Ethical Factors" as well as "Audit Firm Size". Accordingly, and the related alternative sub hypotheses were accepted, suggesting that there is a significant relationship between each of these factors and auditor independence.

Although the significant level for the "MAR" was 0.035, it was still less than 0.05, resulting in accepting the alternative hypothesis that assumes significant relationship between MAR and AI. Since the F-value is 22.871 (more than 1.65) and the main significance level was 0.000 (less than 0.05), the main null hypothesis was rejected. Therefore, it can be statistically concluded that there is a significant relationship between the presumed AI influencing factors and AI in Bahrain.

To illustrate, the table below restates the research hypothesis followed by the hypothesis test result as per the criteria:

Table 6. Hypothesis Testing

Main Hypotheses	
	Result
H0: There is no significant relationship between the presumed *AI influencing factors* and AI in Bahrain.	Reject Null
H1: There is a significant relationship between the presumed *AI influencing factors* and AI in Bahrain.	Accept Alternative
Sub Alternative Hypotheses	
$H1_1$: There is a significant relationship between the *audit regulatory framework* and AI in Bahrain.	Accept
$H1_2$: There is a significant relationship between the *provision of non-audit services* and AI in Bahrain	Accept
$H1_3$: There is a significant relationship between the *mandatory audit rotation* and AI in Bahrain	Accept
$H1_4$: There is a significant relationship between the *auditor economic dependence* and AI in Bahrain.	Accept
$H1_5$: There is a significant relationship between the *audit committees function* and AI in Bahrain.	Accept
$H1_6$: There is a significant relationship between the *internal audit function* and AI in Bahrain.	Accept
$H1_7$: There is a significant relationship between *socio-cultural factors* and AI in Bahrain.	Accept
$H1_8$: There is a significant relationship between the *auditing firm size* and AI in Bahrain.	Accept

4.3. Research Discussion

The study suggested the dominance of NASs provision in safeguarding their objectivity and impartiality. In this context, the majority of the respondents considered that carrying out NASs to audit clients jeopardizes AI and objectivity, which requires imposing strict regulatory measures to mitigate the potential threats.

In terms of the influence of the overall audit regulatory framework on AI, the findings agree that the ISAs as well as corporate governance codes have played significant role in reforming the audit profession. While, Moore et al. (2006) argues that the establishment of new standards is inadequate and that the reforms are usually designed in a way that serves special interest, such argument is mostly affected by specific controversial rules such as the MAR. According to the findings, Audit Partner Rotation has been considered as the least significant safeguard to AI, yet this particular aspect shall not affect the prominence of the audit regulatory framework as a whole. In this regards, the findings of the research supports the standpoint of Nelson (2006) who concluded that the outcomes of any regulations should not be evaluated from single incidents.

Nevertheless, Baydoun et al. (2013) have criticized the implementation of corporate governance including audit committee function, whereby they concluded that Bahrain achieved lower scores in corporate governance scale. This suggests that the opinions of stakeholders concerning ACs may differ from the perceptions of auditors and companies, signifying the need for reforms to strengthen the role of ACs in preserving AI and improving audit quality.

Apart from audit governing structure, the findings highlighted a strong positive correlation between 'socio-cultural & ethical factors' and auditor objectivity. Furthermore, the results are partially comparable with the findings of Abu-Tapanjeh (2009) who concluded that there is strong relationship between business values and Islamic guidelines affecting Bahrain business environment including the audit profession. It is worth noting that even though the research findings show that ethical beliefs have some influence on auditor independence, the existence of functional regulations and auditing standards is deemed as a more influential factor.

As for the economic factors and the influence of the audit fee, the research findings relatively agree with Reynolds and Francis (2001) who found that competition among audit firms adds more pressure on auditors to maintain ethical behaviors, so as to preserve their reputation in the market and avoid litigation risks. Finally, the research findings noticeably agree with Al-Ajmi and Saudagaran (2011) who concluded that auditor being a Big-4 is considered as enhancing factor to auditor independence. The findings also agree that the audit firm size is deemed as one of the least significant influencing factors. Whereas Law (2008) concluded that there are no major differences between the perspectives of Big-4 and non-Big 4 auditors with regards to AI, the findings of the research highlighted some significant variations in perceptions especially in relation to the influence of "audit firm size" and "socio-cultural & ethical factors" on auditor objectivity.

5. CONCLUSION

Our research inferred that AI is highly correlated with a number of variables that consist of the "regulatory authority", "NASs provisions", "MAR", "economic dependence, competition & audit fees", "audit firm size", "IAF", "ACs" as well as "socio-cultural & ethical factors". Whilst the level of association varies among the factors, the research has indicated that all of the preceding determinates play significant roles as safeguards to AI. Nonetheless, the audit market in Bahrain seems to be mainly affected by the international business environment, as the dominance of the licensed Big-4 companies remains apparent. While the existence of Big-4 companies is a key advantage, the role of local audit firms should be noticeably enhanced to promote Bahrain as a leading hub for accounting and assurance services in the region, thereby move a step towards achieving Bahrain's Economic Vision 2030.

5.1. Recommendations

Based on the findings of the research as well as the underlying literature review, it is recommended to apply the following to enhance AI in Bahrain:

- *Oversee the audit firms and accounting professionals through the formation of an independent audit quality board:* Although audit firms adopt specific internal quality control mechanisms to maintain audit quality, there is currently no independent group to objectively and systematically evaluate the effectiveness of these quality measures. If a professional body oversees audit firms, the reliability of the audit reports can noticeably increase. Ideally, such independent body shall be responsible for undertaking regular quality reviews, issuing relevant reports, and communicating their findings to the regulatory authorities and the public to assist in their decision-making. This may also encourage audit firms to adhere with acceptable ethical standards.
- *Restructure the roles and responsibilities of the audit regulatory authorities to achieve a higher level of cooperation and consistency:* Whilst the audit market is officially regulated through the MOIC as per the Auditors Law (No. 26 of 1996), the role of the CBB is also apparent. Particularly, CBB has issued an "Auditors and Accounting Standards Module" as part of the CBB rulebook, in which it sets out certain obligations that external auditors have to adhere to, as a condition of their appointment by specialized licensees. Although the current structure may be deemed satisfactory, it can be argued that it lacks clear mechanisms and defined responsibilities, resulting to undesirable degree of confusion. Therefore, the relationships among the concerned parties (i.e. Ministry of Industry and Commerce, CBB, audit firms, audit clients, international standard setters, quality assurance bodies, local legislatures and the judicial authority) should be thoroughly explained through designing a concrete local audit framework to serve this purpose. This framework should identify the level of authority for each party by clearly identifying the assigned roles and responsibilities. Additionally, the framework should be designed in a way that specifies the authorized regulatory bodies responsible for maintaining specific AI safeguards.

• *Adopt a joint-audit practice for the listed companies:* In order to assure higher degree of independence and competence, it is recommended to consider adopting a joint-audit practice, wherein two auditing firms prepare a single shared audit report for the same client; hence they share the responsibility for completing the audit. In fact, such practice is commonly used in few regions including France, Denmark, Saudi Arabia and Switzerland. One of the underlying advantages is that joint audit can result in greater audit quality, as two audit firms can be more capable and competent in auditing complex accounting treatments or irregularities. Moreover, this approach is expected to encourage both audit firms to act more professionally and ethically to maintain their reputation as a result of the intense market competition. In other words, joint audit offers a communal check of each auditor's diligence, thereby reinforcing auditors' independence and objectivity, yet it will increase the audit fees for client.

• *Amend the existing corporate governance code to include more restrictive measures in relation to audit committees, non-audit services and auditors' rotation:* Despite the fact that the code of corporate governance has addressed the role of audit committees in guarding auditor independence, the code lacks strict legal enforcement in several aspects. The code contains the "comply or explain principle", in which listed companies shall either apply the guidelines of the code or depart from the application of the guidelines subject to disclosing the reasons for noncompliance. It can be argued that such principle results in adverse flexibility, whereby joint stock companies may waive the application of several practices that are deemed important to protect auditor independence. Therefore, it is recommended to limit the application of the "comply or explain principle" to certain rules regarding the audit committee function, non-audit services and mandatory audit rotation. In contrast, such rules ought to be amended in a manner that includes more legal restrictions, to achieve greater level of audit quality assurance. In this context, the rule of audit partner rotation should be replaced with audit firm rotation, and audit committees have to be strictly prohibited from demanding their external auditors to perform any type of non-audit services.

5.2. Study Limitations and Suggestions for Future Research

The research was specifically applied in a Bahraini context and hence the findings may be or may not be applicable to other countries that follow different regulatory frameworks. Furthermore, the scope of this research was clearly limited to one group (i.e. auditors), which means that the perceptions of other related parties including audit clients, and other stakeholders were not assessed. While the association between AI influencing factors and AI were adequately assessed through the structured questionnaire and statistical analysis, future research may incorporate qualitative measures, in addition to the questionnaire instrument, to gain in-depth understanding of the perceptions of auditors about AI, in relation to the cultural and legal borders in Bahrain. In terms of future research, comparative studies would be useful, whereby the extent of AI and audit regulatory frameworks can be critically analyzed, compared and contrasted among countries.

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APPENDICES

Appendix 1. Auditors' Demographic Information

Variable		Options	Frequency	Percentage
1	Gender	Male	181	59.0%
		Female	126	41.0%
		Total	307	100.0%
2	Age Group	30 years or less	111	36.2%
		31 -40	142	46.3%
		41 - 50	45	14.7%
		51 or above	9	2.9%
		Total	307	100.0%
3	Type of Company	Big 4 Audit Firm	180	58.6%
		Non- Big 4 Audit Firm	127	41.4%
		Total	307	100.0%
4	Work Experience	Less than 5 years	112	36.5%
		5 - 10 years	109	35.5%
		11 - 15 years	47	15.3%
		More than 15 years	39	12.7%
		Total	307	100.0%
5	Highest Academic Qualification	Diploma	0	0.0%
		Bachelor's Degree	198	64.5%
		Master's Degree	99	32.2%
		PhD	10	3.3%
		Total	307	100.0%
6	Field of Study	Accounting	197	64.2%
		Commerce	16	5.2%
		Finance	28	9.1%
		Business	54	17.6%
		Economics	12	3.9%
		Total	307	100.0%
7	Professional Qualifications	No professional qualification	123	40.1%
		1 professional qualification	128	41.7%
		2 professional qualifications	40	13.0%
		3 professional qualifications	14	4.6%
		More than 3 professional qualifications	2	0.7%
		Total	307	100.0%

Appendix 2. Frequency Table for Regulatory Authority Variable

Audit Regulatory Authority	*% Strongly Agree*	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*	*Mean*	*%*	*Standard Deviation*
S1-The current audit regulatory framework in Bahrain is adequate to safeguard AI& objectivity	4.9	63.2	13.4	15.6	2.9	3.515	70.3	0.9159
S2-The audit law issued by the Ministry of Industry & Commerce is adequate to safeguard AI& objectivity	6.5	61.9	12.7	16	2.9	3.531	70.6	0.9366
S3-The adoption of International Standards on Auditing in Bahrain positively affects AI& objectivity	27.7	65.5	0.7	4.6	1.6	4.13	82.6	0.7729
S4-A peer review program that focuses on audit firms' compliance with audit & ethical standards could safeguard AI	16	65.1	8.1	8.1	2.6	3.837	76.7	0.8817
S5-Regular inspections of the audit documents of public listed companies could safeguard AI	16.6	77.2	2.3	2.9	1	4.055	81.1	0.6264
S6-Immediate investigations on auditors suspected of non-compliance with audit & ethical standards could safeguard AI	20.2	70.4	5.5	3.3	0.7	4.062	81.2	0.6662
S7-Disciplinary actions & sanctions imposed on auditors who fail to comply with audit & ethical standards could safeguard AI	38.8	53.7	0.7	5.5	1.3	4.231	84.6	0.8256

Appendix 3. Frequency Table for Non-Audit Services Variable

Non-Audit Services Provision	*% Strongly Agree*	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*	*Mean*	*%*	*Standard Deviation*
S8-When an external auditor provides non-audit services to an existing audit client, the auditor may tend to be biased in favor of the client	20.2	72.3	0	6.2	1.3	4.039	80.8	0.7531
S9-When an auditor provides non-audit services to an existing audit client, the auditor may sacrifice his/her objectivity in order to retain that high-non-audit-fee-paying client	26.1	63.2	4.2	5.5	1	4.078	81.6	0.7799
S10-When an auditor provides non-audit services to an existing audit client, the confidence in the auditor's ability to remain independent would be affected	19.9	72.3	4.2	2	1.6	4.068	81.4	0.6802
S11-Audit firms should be totally banned from providing non-audit services	1.3	46.9	9.4	35.8	6.5	3.007	60.1	1.0695
S12-If auditors were to provide non-audit services, such services should be offered to non-audit clients only	23.1	68.4	0.7	6.2	1.6	4.052	81.0	0.7945
S13-The audit committee's approval should be sought before any non-audit services could be provided by an existing company auditor	8.5	74.9	4.2	11.4	1	3.785	75.7	0.7917

Appendix 4. Frequency Table for Mandatory Audit Rotation Variable

Mandatory Audit Rotation	*% Strongly Agree*	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*	*Mean*	*%*	*Standard Deviation*
S14-A lengthy relationship between an auditor & a client is a threat to AI& objectivity	18.9	65.5	7.2	7.2	1.3	3.935	78.7	0.8139
S15-The implementation of audit partner rotation enhances AI& objectivity	10.7	48.9	8.8	28.7	2.9	3.358	67.2	1.0945
S16-The rule of audit *partner* rotation should be replaced with a rule of audit *firm* rotation	25.4	59.9	7.2	5.2	2.3	4.01	80.2	0.8612
S17-The likely benefits of audit *partner* rotation exceed the likely benefits of audit *firm* rotation	2.9	19.2	16.9	49.5	11.4	2.528	50.6	1.0202

Appendix 5. Frequency Table for Auditor's Economic Dependence and Audit Fees Variable

Auditor's Economic Dependence, Competition & Audit Fees	*%*					*Mean*	*%*	*Standard Deviation*
	Strongly Agree	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*			
S18-Income from audit fees received from a single audit client could cause an audit firm to become economically dependent upon that client	20.2	54.4	14.7	10.1	0.7	3.834	0.7668	0.8866
S19- Even though an audit firm is economically dependent upon its client, it could still maintain its independence & objectivity from that client	4.2	45.6	11.1	33.2	5.9	3.091	0.6182	1.0898
S20-In deciding whether to invest in a company, I take into consideration the amount of audit fees the company pays to its auditor	4.2	57.3	24.1	9.8	4.6	3.469	0.6938	0.8974
S21-When an audit partner's income is dependent on total fees generated from a single audit client, his/her ability to remain independent may be affected	0.3	71.7	14.3	13	0.7	3.58	0.716	0.7427
S22-Investment decisions in a company would be affected if auditors were perceived to be economically dependent upon that company	2.9	53.4	24.8	18.2	0.7	3.397	0.6794	0.8392

Appendix 6. Frequency Table for Audit Committee

Audit Committee	*%*					*Mean*	*%*	*Standard Deviation*
	Strongly Agree	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*			
S23-The main role of an audit committee of appointing & reappointing of the external auditors is expected to safeguard AI& objectivity	14.7	62.2	5.5	15.3	2.3	3.717	0.7434	0.9707
S24-The existence of an audit committee may safeguard AI if they are active by holding more than 4 meetings a year	10.7	60.9	7.8	14.7	5.9	3.56	0.712	1.0535
S25-The existence of an audit committee may safeguard AI if they review & approve audit fees	18.6	68.1	1	11.4	1	3.919	0.7838	0.8574
S26-The existence of an audit committee may safeguard AI if they are composed of a majority of independent & non-executive directors	38.1	53.4	1	6.5	1	4.212	0.8424	0.8348
S27-The existence of an audit committee may safeguard AI if one member of the audit committee has accounting & financial expertise	39.4	51.8	1	6.5	1.3	4.215	0.843	0.859
S28-The existence of an audit committee may safeguard AI if there is a compulsory audit committee report that describes their activities & actions taken during the year	25.1	55.7	13.7	3.9	1.6	3.987	0.7974	0.8323

Appendix 7. Frequency Table for Internal Audit Function

Internal Audit Function	*%*					*Mean*	*%*	*Standard Deviation*
	Strongly Agree	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*			
S29-The existence of an internal audit function safeguards the independence & objectivity of external auditors	28.3	43.3	14.7	12.4	1.3	3.85	77%	1.0115
S30-The existence of internal audit function affects the extent of evidence needed by external auditors to issue an audit opinion	4.6	51.8	12.1	27.4	4.2	3.251	65%	1.0411
S31-The existence of internal auditors limits the scope of the audit to be performed by external auditors	0.3	26.7	6.2	59	7.8	2.528	51%	0.9811
S32-External auditors rely on the findings of internal auditors in a way that can weaken their independence & objectivity	0.3	27	5.9	59.6	7.2	2.537	51%	0.9774

Appendix 8. Frequency Table for Socio-cultural & Ethical Factors

Socio-cultural& Ethical Factors	*%*					*Mean*	*%*	*Standard Deviation*
	Strongly Agree	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*			
S33-If auditors maintain friendly relationship with their clients, their reliability will be questioned	25.1	44.6	5.9	19.2	5.2	3.651	73%	1.196
S34-Receiving gifts from clients compromises AI& objectivity	38.4	46.3	5.2	8.5	1.6	4.114	82%	0.9549
S35-Socio-cultural factors are positively correlated with AI& objectivity	26.7	58.3	4.6	7.8	2.6	3.987	80%	0.9287

Appendix 9. Frequency Table for Audit Firm Size

Audit Firm Size	*%*					*Mean*	*%*	*Standard Deviation*
	Strongly Agree	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*			
S36-The size of the audit firm is positively associated with audit quality & independence.	13.7	52.4	4.6	27.4	2	3.485	69.7%	1.0917
S37-The Big Four firms are more risk averse in respect of damage to their reputation from public scandals & or audit failures.	13	55.4	4.9	21.5	5.2	3.495	69.9%	1.1213
S38-The Big Four firms are more independent & more likely to issue qualified reports.	6.8	47.6	15.3	21.5	8.8	3.221	64.4%	1.1274
S39-Non-Big Four firms achieve a lower level of audit independence & objectivity.	6.2	47.2	9.8	31.6	5.2	3.176	63.5%	1.1033

INVESTMENT BANKING, THE CERTIFICATION EFFECT AND M&A DEALS: AN EVENT STUDY APPROACH

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Abstract

Several studies have found the existence of a relationship between the role of investment banks appointed as advisors in M&A deals and the yields earned by their clients. Traditionally this relationship is fostered by the ability of the leading investment banks to arrange and structure the best deals – i.e. the Superior Deal Hypothesis – and by the "certification effect", namely that their presence provides assurance to the capital markets where are traded the companies involved– i.e. the Certification Effect. Our study also investigates the strength and direction of this relationship before and after Lehman Brothers collapse. The analysis, which uses an original composite metric in order to measure the reputation variable, is focused on the transactions that took place between listed companies in two time frames specifically pre and post the Lehman Brothers bankruptcy. The total sample is composed of 229 transactions, divided into 161 and 68 observations, pre and post Lehman respectively. The analysis conducted allows us to separate the Superior Deal Hypothesis from Certification Effect. On evidence, after the Lehman default, the wealth of shareholders involved (both relating to the targets and acquirers) is significantly influenced by the reputation of the investment banks which acted as advisors. Conversely, before the start of the financial turmoil in September 2008, no significant evidence has been found. The analysis conducted suggests that subsequent to the Lehman Brothers collapse, the certification effect has been playing a crucial role in shareholders' choice.

Keywords: Investment Banking, Financial Advisory, M&A Transactions, Certification Effect, Superior Deal Hypothesis, Event Study Methodology
JEL Classification: G21, G24, G32, G34
DOI: 10.22495/cocv14i2c2p11

1. INTRODUCTION

Merger and acquisition deals (M&A) are one of the most important activities in the field of corporate finance and, also relating to those who offer and carry out investment banking activities. The importance of this phenomenon can be understood from the fact that in 2007, at the time of the most recent wave of M&A activities, about 4.2 trillion dollars were invested in such activities at the global level. In the meanwhile, investment banks acting as advisors for the counterparties in such transactions, generated revenues in the form of fees to a value of approximately 39.7 billion dollars. A large proportion of this value was earned by only ten banks, which acted as advisors in most of the operations. It is difficult to find empirical support in the literature for the relationship between the reputation of investment banks appointed as advisors, and the quality of the services offered by these banks (McConnell and Sibilkov, 2016). Indeed, the results obtained on this matter are often discordant or not significant. Possible reasons for such discordances can be found in the use of different measurement methodologies selected by scholars for the proxy reputation (McLaughlin, 1990; Chemmanur and Fulghieri, 1994; Rau, 2000; Bau and Edmans, 2011, Morrison *et al.*, 2014) as well as in the different business areas – securities issuances in capital markets, M&A advisory, private equity investments, risk management services – of the investment banking industry investigated (Megginson and Weiss, 1991; Servaes and Zenner, 1996; Morrison and Wilhelm, 2007; Fernando *et al.*, 2012; Li, 2016).

Motivated by the new economic-financial context that has developed after the Lehman Brothers bankruptcy, which has undoubtedly altered the investment banking competitive landscape, this paper aims to study the relationship between investment bank reputation and the quality of the services they offer as advisors in M&A operations. According to the previous literature (Ellis *et al.*, 2006; Capizzi, 2007a, Bau and Edmans, 2011; Morrison *et al.*, 2014), the quality of services offered would be expressed by the bank's capacity to increase the potential for creating shareholder value in corporate mergers and acquisitions, i.e. the operations in which the control of a company is transferred by means of the transfer of ownership. A distinctive feature of the research carried out in this paper compared to the previous literature, is represented by the focus on a sample of acquisitions and mergers which have taken place between listed companies only. This choice was made for several reasons. The first is that the investment banks reputation is not equally important in all transactions and its effects are more pronounced in situations which create a greater exposure to the reputation risk (Golubov, Petmezas and Travlos, 2012). As Rhee and Valdez (2009) suggest, greater visibility leads to higher potential damage to reputation. The second reason depends on the fact that in operations involving listed companies it is more difficult for the counterparties to capture and release value in their own favor by means of the greater contractual power held by the listed companies compared to the non-listed companies. Therefore, the acquisitions in which the target is also listed require greater skill and ability (Fuller, Netter, and Stegemoller, 2002) on the part of the advisors that assist the negotiation, in order to obtain maximum value from the transaction. For these reasons, the reputation of the investment banks can have a determining role in M&A operations between listed companies (Golubov et al., 2012).

Having said this, focusing on a sample which includes only transactions between listed companies, the purpose of the empirical analysis is to verify whether, there is any significant relationship between the creation of value for the shareholders and the reputation of the investment bank which assists the operation regarding M&A deals.

As such, we investigate if the value creation path, both for the acquirer (or bidder) and the target (or seller), is sustained or boosted by the ability of a top tier investment bank in selecting, arranging and structuring the deal – *i.e. Superior Deal Hypothesis* – or in the Certification Role that is played by the investment banks. Consequently, the major contribution of the paper is to fill the gap in the extant literature, which has not found yet unambiguous evidence about the value creating potential of M&A advisory relationships.

2. M&A DEALS IN THE ECONOMIC LITERATURE

The relationship between reputation, quality and price[13] is dealt with in the models of Klein and Leffler (1981), Shapiro (1983) and Allen (1984). These models are applied to situations in which a subject repeatedly sells its own products on the market. When the quality of the product could be ascertained only after the purchase, a premium price was taken as a symbol of high product quality. This premium price exists to compensate the seller for the resources used to create a better reputation for himself. The models linked to a generic market, have also been applied within other studies in the literature relating to the provision of investment banking services. In fact, investment banks need to sell their own services repeatedly and the quality of such services cannot be seen in advance. Since investment banks are remunerated for the services which they offer continuously on the financial market and their permanence on such markets depends on the quality of the services supplied and from the correct behaviour adopted, there is no doubt that in such a scenario the advisor's reputation assumes a major role. For example, Chemmanur and Fulghieri (1994) applied the model to equity underwriting services. In their model, investment banks with a high reputation gave better services and asked for higher fees. The literature has examined this theoretical model, and the considerable empirical evidence related to IPOs and SEOs, has confirmed the fundamental role of bank reputation in guaranteeing higher quality services and a more credible certification effect on the value of the securities issued.

Continuing with our literature review, it can be noted that the literature regarding corporate control also takes into consideration other viewpoints and other classifications of banks and financial intermediaries. For example, Allen, Jagtiani, Peristiani and Saunders (2004) have examined the role of commercial banks as financial consultants. The authors have shown that the returns on the buy-side are not linked to whether they use their own commercial bank as an advisor in an M&A operation. Recently, Song and Wei (2010) have concentrated instead on the role of the “boutiques[14]” and on the comparison of these banks against the performance of traditional investment banks, which offer complete investment banking services. The preceding studies found that the boutiques are more used in small transactions and that the acquirers who avail of boutiques in acquisitions of listed companies manage to pay lower fees. However, this does not mean greater abnormal returns and in spite of the popularity of such advisors in recent years, there is no concrete evidence that a company can obtain benefits by choosing boutiques rather than investment banks which cover a wider range of services. Furthermore, another conclusion of the study is the fact that the fees requested by boutiques are in general about the same as those charged by traditional investment banks (Song and Wei, 2010). Recently, McConnell and Sibilkov (2016) find evidence that, when choosing their advisors, acquiring companies consider their reputation, thus reducing to some extent the possibility for the advisor themselves to struggle for deal completions and success fees, regardless of the value creation consequences for the acquirers’ stockholders.

3. THE ROLE OF INVESTMENT BANKING ADVISORY SERVICES IN M&A DEALS

There are many reasons why a company's management decides to undertake in M&A operations. One of the main reasons is expansion

[13] This work does not take into consideration the dynamics relative to the fees applied by the investment banks.

[14] The “boutiques” are independent companies, of relatively smaller size than traditional investment banks, and they focus on advisory services in specific sectors. They prefer operations of medium-small size and they are experienced and skilled in M&A. A particular feature of these companies is that "they do not sustain the financial management and risks of activities in their own name" (Forestieri, 2011). The most important names include Lazard (at least until 2005, the year of its listing), Rothschild and, of the Italian boutiques, Banca Leonardo.

(Gaughan, 2011). Company acquisitions therefore represent a way of pursuing growth, as an alternative to the strategic option of internal organic growth. In this regard, synergies are the main factors in the creation of value and they represent a decisive reason at the basis of M&A operations. The other determining factors for a company acquisition are the benefits that the buyers and sellers expect as the result of the M&A operation. Ravenscraft and Scherer (1987) describe how sellers sell when buyers make sufficiently attractive offers. The M&A activity is therefore often influenced by a number of factors. These include regulations, market dimensions, technological innovation, fluctuations in financial markets and financial innovations. Furthermore, stimuli, opportunities and risks which develop in the market can then become strategic options, sources of synergies, which determine the convenience of an operation (Capizzi, 2007).

For the companies directly controlled, M&A can be of particular strategic relevance (Capizzi[15], 2007). Considering the importance of such events, M&A activity is a critical element among the wide range of areas of competences touched by special underwriting operations and advisory services. As pointed out by Servaes and Zenner (1996), companies intending to acquire the control of another company usually take avail of an advisor when the transaction is perceived as complex and when the managers do not have the benefit of past experience gained from other acquisitions.

The hypothesis underlying the decision to employ an investment bank is that these institutions should be able to help their customers to identify the best targets and to arrange the appropriate deal structure to increase the return for their customers. However, as seen in the literature (Fernando *et al.*, 2012; Megginson *et al.*, 2014), some existing studies follow a different direction and do not point out any positive relationship between a bank's reputation and the buyer's performance (the most beaten track). Other results seem to support the hypothesis of a passive execution of operations, in which the banks do not supply real consultancy services with added value, but merely follow the instructions issued by the customer (Bao and Edmans, 2011). However, returning to the reasons for the demand for advisory services and leaving aside the arguments concerning the effective added value that may or may not be contributed by the activity of the investment banks – these questions will be answered further below – the general reasons for requesting an advisor can be classified under four main types (Capizzi, 2007a). The first type regards the financial broker's capacity to reduce the costs of a transaction within the corporate ownership and control reallocation market (Buongiorno and Conca, 2007). A second type relates to the existence of information asymmetries, which is a factor that increases the need for advice, given the superior ability and efficiency of financial brokers in obtaining, producing and managing information on relevant aspects related to which the interests of the counterparties engaged in a given transaction normally diverge. A third type of reason which justifies the need to employ an advisor pertains to the "certification effect" which the advisor can create. The last type of reason derives instead from the context of the bank-broker relationships that cover different periods. As shown by some mentioned contributions, the fees for the advisory service performed to assist in the M&A operations often include a sort of "relationship fee" that is transferred to the investment bank that has already acted as an advisor for a given company in previous M&A operations (Capizzi, 2007a; McConnell and Sibilkov, 2016)[16].

Therefore, why are investment banks often necessary in special financing operations? The banks in question deal with the technical aspects of the transactions: they collect and process the available information on the companies involved in the transaction, they suggest the best options in terms of how to structure the operation, they assist their customer companies in negotiating the terms of the deal, and they give an opinion (a fairness opinion, if requested) on the suitability of the price negotiated. It is a question of information asymmetries: if a company were capable of interacting independently with financial market participants so that they could certify the quality of their own products (shares, bonds, etc.), the investment banks would have no reason to exist. Taking into account all the considerations expressed above, one can argue that the fundamental role of investment banks in the sphere of special financing operations is that of obtaining and processing the available information in order to certify the quality of the operation on the basis of their own experience and reputation. The higher the advisor's reputation, the greater the so-called certification effect tends to be.

4. THE "LEAGUE TABLES" OF THE INVESTMENT BANKS

To get an idea of the actors present in the investment banking industry, one must look at the relevant "league tables". The "league tables" are investment bank classifications in a given business: classifications are available for M&A, IPO, bond issue operations, etc. The investment banks place great importance on league tables, since they are an important marketing and, therefore, origination tool. To obtain evidence of a bank's leadership in a certain sector/business, the only objective tool that can be used to verify whether the statements are correct or not are the league tables. One of the features of these tables is that they tend to be stable over the medium-long term, especially with regards to the top positions; in other words, the leading banks, i.e. those which have the highest reputations and market shares in the sector, are constantly placed in the top positions of the league tables. However, some changes have taken place as a result of the recent financial crisis, which made some large banks bankrupt (for example, Lehman Brothers) and which forced others to carry out deep reorganisations.

With regard to technical aspects, it must be

[15] Capizzi, V. (2007). Financial brokers and services in support of company acquisitions. In G. Forestieri (edited by) Corporate e investment banking, 4th edition, Milan, Egea: pp. 345-387.

[16] Allen et al. (2004) have examined in depth the aspects of the so-called certification effect and of the customer-consultant relationship, and they have extended them to the "role" of the investment banks in M&A operations.

noted that there are normally three possible criteria according to which a league table is constructed[17]: the value of the operations (or deal values), commissions (or fees) and the number of operations. The most used criterion is deal value, which does not seem to provide the same incentives to conflict of interest behaviours than the other criteria[18].

5. EMPIRICAL ANALYSIS

5.1. Research question

Studies focused on the role of investment banks in M&A have traditionally highlighted the effect of the reputation of investment banks in producing greater yields for their clients involved in the transaction. This aptitude has been referred to separately as the ability for the banks with better reputations to arrange and structure M&A deals to increase the potential creation of value embedded in the operation – *i.e. Superior Deal Hypothesis* – and the certification role provided to the market about the feasibility of the operation – *i.e. Certification Role.*

According to the Superior Deal theory, the banks with better reputations are able to offer to their clients services with higher added values (Ismail, 2011). Considering that the quality of the most important activities included in the investment banking services conducted depends critically on a bank's experience (Ma, 2006), the reason for the importance of the role of the league tables in measuring the value of the bank's reputation can be understood. In addition, the bankers of top investment banks ought to have greater negotiating capacity thanks to their greater experience, and consequently better results for their customers. According to the Certification Role instead, the most prestigious investment banks, or those well positioned in the league table, should reduce the uncertainty about the deal with their presence, and at the same time, act to assure the market about the affective company quality.

What we retain as worthy of investigation is to verify whether the role of the investment banks has changed, either for their clients or for the market, has changed and toward which direction before and after the Lehman collapse, a phenomenon generating a great deal of discontinuity in the capital markets and investment banking industry, as well as a valuable research opportunity (Fernando *et al.*, 2012; Morrison *et al.*, 2014). This research question comes from the different context in which the banks have been facing during these two time periods.

Before the turmoil that followed after the credit crunch and Lehman default, the combination of high liquidity and low returns lead the investors to be more risk taking.

It is plausible to affirm that in this context where investors are less risk adverse, the role of the investment banks was less crucial in certifying the quality of the operation or in selecting the counterparties and arranging the deal.

Contrastingly, after the Lehman collapse, when the market passed from a bullish to a bearish phase, the interests and the expectations about the role of investment banks should have been strongest considering the more risk adverse behaviour of investors.

In other words: in a context of increasing uncertainty and in which almost all the main players were involved in restructuring or rationalisation activities, the presence of a top tier investment bank would have confirmed the quality of the operation to the market, as well as of their participants, and in doing so have led to a better evaluation.

According to this hypothesis, the aim of this paper is verify whether and how the role of investment banks has changed before and after the Lehman collapse and, also if the ability to create value for their clients can be confirmed.

5.2. The dataset used

A M&A transactions sample has been collected over a period of 8 years, from 15th September 2004 to 15th September 2012. For the purposes of the analysis, the time frame has been divided into two symmetrical parts: the 4 years before and the 4 years after 15th September 2008[19]. The choice of these two periods was made to make the periods observed more similar and more comparable. The data were collected from a financial data provider Thomson One Investment Banking (Thomson Reuters) system with regard to M&A operations announced and completed among companies located in the following Western European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Iceland, Italy, Luxembourg, Norway, Holland, Portugal, United Kingdom, Spain, Sweden, Switzerland (the same 18 countries considered by the STOXX Europe 600 Index, which is the market index which has been taken as a benchmark, as will be indicated further below).

The choice of focusing the analysis on the European market lies in the different evaluation about the role played by investment banks: the less the experience and tradition of M&A activity a market has, the more the importance and contribution offered by top tier investment banks appointed as advisor tends to be.

We believe that for these kinds of markets, except for the UK, the importance of a leading investment bank is more pronounced than in markets with a strong experience and history of M&A deals, such as the North American one. In fact, in a "market" that suffers for a lack of knowledge about this kind of operations, the Certification Role ensured by a top tier investment banks is perceived in a stronger way than in comparison to more experienced markets and, thus, significantly valued by corporate clients.

Investment bans' presence in such countries is relevant for both the target and the acquirer. The initial sample was expanded by applying additional selection criteria, in order to obtain a dataset with features appropriate for the analysis carried out. In

[17] Important financial information providers, like Bloomberg or Thomson Reuters, which register and file the events on the financial markets in databases, allow for obtaining ad hoc league tables for pre-determined time periods and specific geographic areas.
[18] Source: Thomson Reuters SDC.
[19] Date when Lehman Brothers was placed under bankruptcy protection.

particular, the following transactions were excluded: those with a deal value below €1 m; those in which the target and acquirer were both not listed; those which regarded shares representing less than 5% of the target's total equity. In addition, wishing to pay greater attention to transactions implying the transfer of control, the only operations considered were those in which the acquirer held less than 50% of the shares initially and more than 50% of the shares afterwards. Then in view of the fact that the purpose of the analysis was to study the relationship between the results of the operation and the advisor's reputation, all the transactions in which the provider did not give any indication of an advisor were also excluded. This information may have been concealed for the sake of confidentiality, where the terms of the operation and/or the consultants involved were not disclosed, or it may have been because the companies chose not to take avail of external consultants. Explicit reference is made in the literature to such operations, defining them as "in-house deals" (Servaes and Zenner, 1996). Lastly, to avoid distortions in the results due to the particular economic situation in the more recent of the two periods observed, all operations involving targets or acquirers belonging to the financial services sector were also eliminated from the sample.

5.2.1. Investment Bank Classification

The literature offers various indications for measuring the reputation of investment banks[20]. Consistently with the arguments previously developed, in this paper we select the market share held by investment banks as a good proxy for the reputation and quality. More in detail, we compute the accumulated counter value of the deals followed as a percentage of the total value of the deals in a given geographic area over a specific time frame.

To classify the investment banks for the purposes of this analysis, two methods have been followed, one of which was used as the control method. The first is based on the rankings which can be obtained directly from the financial data provider, Thomson Reuters, while the second method is more linked to the particular physiognomy of the transactions sample used for the empirical analysis. Since the research focused on Western Europe, the annual rankings were downloaded from the Thomson Reuters' M&A League Tables section, based on the accumulated deal values of the operations announced in each year within the sample time frame. Placing the positions in order of size, an absolute investment bank classification can be drawn up[21]. Table 1 shows the first twenty banks[22].

The first ten banks are identified as top investment banks. In the Table 2, each investment bank present in the sample of transactions has been accredited the deal value of every transaction in which it has participated in. If one of the companies (whether target or acquirer) involved in the operation has taken avail of several advisors simultaneously, the deal value of the transaction is attributed to all the advisors involved. The bank which has obtained the highest cumulative deal value has then been assigned first place, that with the second highest deal value has been placed second, and so forth on down to the bank which has given its assistance for the lowest cumulative value. This procedure has produced the following results in Table 2.

To avoid distortions due to the particular choices made during the selection phase and when constructing the transactions sample, and to obtain a more absolute and objective assessment of the reputation of the investment banks, the first method was chosen, which derives from a general consideration of the entire M&A market in Western Europe.

5.2.2. Descriptive analysis of the sample

Following the selection criteria outlined in section 5.2.1, a sample of sufficiently similar M&A operations was obtained. After a few small modifications which were made due to the particular needs of the empirical analysis (elimination of the observations corresponding to the maximum and minimum CARs (Kale et al., 2003)), the final sample was composed of 229 observations. In particular, these observations are divided into 68 transactions announced after the date of the Lehman Brothers bankruptcy and 161 transactions announced before the bankruptcy. The difference in terms of the number of transactions between one period and another gives an idea of the decrease in the activity which was typical immediately after the bankruptcy and in the period of the financial crisis in general.

Dividing targets and acquirers according to the macro sector (or macro industry[23]) to which they belong, it can be observed that the companies of our sample are distributed among various sectors and that the M&A activity in each sector differs between the two periods considered (Table 3). It can be noted, in particular, that in the four years before the Lehman Brothers Bankruptcy, transactions involving

[20] Megginson and Weiss (1991), in their work concerning IPO operations, considered the effective market share, while Bowers and Miller (1990) and Servaes and Zenner (1996), also on the basis of the market share, divided the banks into two groups: top tier (the first 5 banks[20]) and second tier (all the others) depending on the market share of the corporate control market in the period of the sample used. Rau (2000) instead considered three reputation levels. Alternatively, Carter and Manaster (1990), regarding IPO operations, deduced the reputation of the investment banks from their positions in the tombstones[20] shown in the financial daily newspapers. Carter, Dark, and Singh (1998) have shown that the market share (understood as a continuous variable), the three-level classification, and the classification deduced by the tombstones, are closely linked as far as the IPO market is concerned.

[21] The first-tier investment banks are those in the first ten positions, and the second-tier investment banks are all the other classified after the tenth position (Ismail, 2010). The terms first-tier and top-tier are used indistinctly in this paper work and have the same meaning.

[22] For informative purposes, the positions adopted by the various advisors in each year are shown, as reported by Thomson Reuters.

[23] The division according to the sector to which the companies belong has been based on the macro industry classification provided by Thomson Reuters. More specifically following the terminology of the financial data provider, the companies of our sample are divided among eleven sectors: Energy and Power (ENERGY); Industrial (IND); High Technology (HT); Telecommunications (TELECOM); Retail (RETAIL); Healthcare (HEALTH); Media and Entertainment (MEDIA); Real Estate (REALEST); Materials (MATERLS); Consumer Products and Services (CPS); Consumer Staples (STAPLES).

Table 1. Investment Banks: ranking (league table)

Advisor	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*	*2004*	*Average position*	*Rank #*
Goldman Sachs	1	1	1	7	5	1	2	1	2	2,3	1
Morgan Stanley	2	2	2	3	3	4	1	4	5	2,9	2
Deutsche Bank	3	3	3	2	8	6	10	6	7	5,3	3
JP Morgan	6	8	7	6	1	7	6	2	6	5,4	4
Citi	9	10	10	4	4	2	4	7	3	5,9	5
Rothschild	10	4	5	8	11	8	5	5	1	6,3	6
UBS	14	6	12	1	2	5	8	9	13	7,8	7
Bank of America Merrill Lynch	15	13	14	11	6	3	3	3	4	8,0	8
Credit Suisse	7	11	4	5	7	9	11	12	12	8,7	9
BNP Paribas	5	16	8	12	10	11	7	8	9	9,6	10
Lazard	12	9	6	9	9	15	9	15	10	10,4	11
Nomura	8	15	15	23	15	10	12	10	16	13,8	12
HSBC	19	7	11	18	20	21	13	14	19	15,8	13
Societe Generale	17	5	9	15	12	26	15	22	29	16,7	14
Credit Agricole	13	12	17	21	19	24	14	13	30	18,1	15
Mediobanca	21	21	26	16	16	14	20	18	14	18,4	16
RBS	37	31	20	13	23	12	16	16	8	19,6	17
UniCredit	42	19	19	24	25	23	37	21	15	25,0	18
Santander	39	34	37	25	18	13	22	35	24	27,4	19
Leonardo & Co	35	22	33	26	26	25	17	19	46	27,7	20

Source: Thomson Reuters (2004-2012)

Table 2. Investment Banks: deal value

Advisor	*Deal value (€m)*	*Rank #*
Morgan Stanley	149.172	1
Goldman Sachs	129.131	2
JP Morgan	128.928	3
Bank of America Merrill Lynch	107.782	4
Citi	104.063	5
UBS	97.319	6
Credit Suisse	86.064	7
Deutsche Bank	79.422	8
BNP Paribas	61.722	9
Lazard	56.506	10
HSBC	39.757	11
ABN-AMRO	39.647	12
Rothschild	36.958	13
Societe Generale	36.847	14
Santander	25.772	15
Greenhill&Co	20.707	16
Dresdner Kleinwort Wasserstein	18.897	17
Lehman Brothers Internetional	14.410	18
Perella Weinberg Partners	13.722	19
Credit Agricole	12.194	20

Source: Thomson Reuters

targets in the high technology (HT) sector were predominant, while in the successive four years this type of transaction decreased sharply (87.5% fewer), going from 40 (pre Lehman) to 5 (post Lehman) acquisitions of high-tech companies. Comparing the two periods, a particular fall can also be seen in transactions aimed at acquiring consumer goods (CPS and STAPLES). The fall in activity is greater in the case of companies which produce the so-called 'consumer staples', i.e. consumer goods which are not cyclical, which are primary, like food and beverages. In this case, the analysis of our sample shows a change from 13 to 2 acquisitions of companies belonging to this sector (a fall of about 85%). An explanation for this tendency can be found in the general reduction of consumptions at the macro level which may have slowed down the growth of the sectors connected, in particular, to the income available and to individuals' tendency to consume. On the contrary, a certain equilibrium can be seen in the M&A operations for the acquisition of companies in the Energy and Power sector or the Health Care sector (Table 3).

Table 3. Macro Industry

Macro Industry	*Pre-Lehman*		*Post-Lehman*		*Full-Period*	
	Targets	**Acquirers**	**Targets**	**Acquirers**	**Targets**	**Acquirers**
Energy	11	12	9	9	20	21
IND	18	21	13	14	31	35
HT	40	28	5	6	45	34
Telecom	7	18	4	3	11	21
Retail	9	11	4	4	13	15
Health	11	9	9	7	20	16
Media	10	12	3	6	13	18
Realest	9	8	5	5	14	13
Materls	16	16	9	9	25	25
CPS	17	16	5	2	22	18
Staples	13	10	2	3	15	13

Analysing Table 4, it can be seen that, on average, there are more companies which do not avail of a first tier advisor than those which do. However, since we have classified only ten investment banks as first tier advisors, it is in any case surprising to note that, during the entire time frame, these are taken into consideration by targets in 41% of cases and by acquirers in 46% of cases. Observing Table 4 in detail, it is also curious to notice that while the request for first tier banks on the part of buyer companies has remained stable in both the pre-Lehman and the post-Lehman periods, the request on the part of target companies for advisors with a high reputation decreased considerably after the bankruptcy (when the financial crisis was spreading uncontrollably). In particular, compared to an average of 41% over the entire time frame of eight years, only 29% of the 68 target companies of the sample in the post Lehman period sought support from a top advisor. One explanation for this phenomenon could be the need, due to the particular economic situation, to employ consultants who required relatively much lower fees (this is the hypothesis underlying the theory of Saunders and Srinivan (2001), according to whom the top advisors generally ask for much higher fees than the second tier advisors). However, this motive does not explain why the same phenomenon does not also appear in the case of bidders (Table 4).

Table 4. Sample distribution

	Pre-Lehman	*Post-Lehman*	*Entire period*
Targets with a top-tier advisor	75	20	95
%	*47%*	*29%*	*41%*
Targets without a top-tier advisor	86	48	134
%	*53%*	*71%*	*59%*
Acquirers with a top-tier advisor	76	29	105
%	*47%*	*43%*	*46%*
Acquirers without a top-tier advisor	85	39	124
%	*53%*	*57%*	*54%*

To conclude, the features of the sample in terms of operations size, using the deal values of the same as proxy, can now be observed. It can be seen from Table 5, that in the four years after the Lehman crash, the dimensions of the transactions of our sample were considerably smaller than those of the "pre-crisis" period. The average deal value fell from €1,606m before the crash to €466m after the crash. This enormous difference can be explained by the fact that after the crash (in the period of the global financial crisis) the maximum sizes of transactions throughout the whole world decreased considerably. It can be seen from the "Maximum" column in "Table 5" that the sample considered for the purpose of the research shows this trend inversion. The largest transaction before the Lehman Brothers bankruptcy (and before panic spread through financial markets), had a deal value of €26,225 m against a deal value of €3,416m for the largest transaction of the sample from after 15 September 2008.

Table 5. Sample data: descriptive statistics

Period	***N***	***Descriptive statistics* (€m)**				
		Mean	Median	Minimum	Maximum	Range
Pre Lehman	161	1,606	228	2	26,225	26,223
Post Lehman	68	466	134	2	3,416	3,414
Entire period	229	1,267	189	2	26,225	26,223

Furthermore, considering the dimensions of the deals and the presence or absence of top tier advisors, it can be seen that first tier investment banks are more engaged in relatively larger transactions on both the sell-side and the buy-side. Consider the following Table 6 and Table 7, for target and bidder companies respectively. The tables show that this pattern, according to which the top-tier banks are used in transactions of greater dimensions, holds firm in all the time frames considered. For the target companies in general (without considering the division between the two periods), a top advisor has given consultancy services in transactions with an average deal value of €2,756m while it was not engaged (or did not agree to offer its services) in the relatively smaller transactions, at an average deal value of €212m. The table also confirms the conclusions on the diversity of the transactions in the two symmetrical time periods. The average value of the operations that were assisted by a top investment bank decreases from €3,198m in the pre-crash period to €1,095m in the post-crash period. A similar phenomenon can also be seen with respect of the bidders. In general, they also employ top investment banks for transactions of relatively greater size. In detail with reference to the entire time frame covered by the sample, it can be seen that the average value of the deals assisted by at least one top-tier investment bank is €2,366m against an average deal value of €337m for transactions carried out without the services of a top investment bank.

Table 6. Sell-side deal value descriptive statistics (€m)

Sell-side deal value descriptive statistics (€m)			
Pre-Lehman	No top-tier advisor	Mean	217
		Median	88
		Minimum	2
		Maximum	2.711
		Range	2.709
	With top-tier advisor	Mean	3.198
		Median	837
		Minimum	18
		Maximum	26.225
		Range	26.207
Post-Lehman	No top-tier advisor	Mean	204
		Median	64
		Minimum	2
		Maximum	2.822
		Range	2.820
	With top-tier advisor	Mean	1.095
		Median	644
		Minimum	25
		Maximum	3.416
		Range	3.392
Entire period	No top-tier advisor	Mean	212
		Median	76
		Minimum	2
		Maximum	2.822
		Range	2.820
	With top-tier advisor	Mean	2.756
		Median	809
		Minimum	18
		Maximum	26.225
		Range	26.207

Table 7. Buy side deal value descriptive statistics (€m)

Buy side deal value descriptive statistics (€m)			
Pre-Lehman	No top-tier advisor	Mean	410
		Median	104
		Minimum	2
		Maximum	16,910
		Range	16,908
	With top-tier advisor	Mean	2,944
		Median	802
		Minimum	14
		Maximum	26,225
		Range	26,211
Post-Lehman	No top-tier advisor	Mean	178
		Median	62
		Minimum	2
		Maximum	2,012
		Range	2,010
	With top-tier advisor	Mean	853
		Median	357
		Minimum	6
		Maximum	3,416
		Range	3,411
Entire period	No top-tier advisor	Mean	337
		Median	88
		Minimum	2
		Maximum	16,910
		Range	16,908
	With top-tier advisor	Mean	2,366
		Median	671
		Minimum	6
		Maximum	26,225
		Range	26,220

In addition, it can be seen that the re-sizing of the deal values between the pre-Lehman crash period and the post-Lehman crash period is also confirmed by the analysis of the buyer companies. However, it is curious to note that this difference in average deal size is not so evident for those carried out without the services of a top advisor. This confirms the hypothesis according to which companies are more inclined to request the assistance of a top investment bank in complex M&A operations of relatively higher sizes (Servaes and Zenner, 1996).

5.3. The event study methodology

This section focuses on the description of the event study approach. This is an analysis method which, by examining the changes in share prices, allows for estimating the impact generated by a specific corporate event. In this context, the term "event" refers to a fact or piece of information which if made public can significantly alter the value of a listed company. The use of this method is based on the fact that the occurrence of an abnormal share price performance, measured around the time of a certain company event, can help us to assess the impact that this certain event will have on the wealth of the shareholders of the company involved (Kothari and Warner, 2007). According to the efficient markets hypothesis, prices reflect all the information publicly available on a particular asset (Fama, 1970). As far as this analysis is concerned, all the observations considered regarding the sample correspond to events (M&A announcements) that take place at different moments: the first public announcement of a certain M&A operation is the most suitable moment to measure the impact (Halpern, 1983). It is worth remembering that abnormal returns exist and that they can be measured even before the effective announcement, usually because of leaks of confidential information and/or because the market itself gives advance notice of the event (Keown and Pinkerton, 1981). However, since the market cannot entirely predict an event, an abnormal share price trend can be observed and can therefore be ascribed to the event itself.

The standard method followed is divided into several steps: a) definition of the event of interest and identification of the time period (the so-called event window) over which to examine the impact that the event has had on the share prices; estimate of the expected return; b) calculation of the abnormal return; c) verification of the zero hypothesis and d) interpretation of results.

Before describing the method which will lead to the final result, it is necessary to clarify two basic concepts:

- *estimation window:* the period of time over which to estimate the normal market return. This period is prior to the event, to avoid the announcement influencing the estimate of the parameters;
- *event window:* the period of time, including at least the day of the event, over which to examine the impact that the said event has had on the share price.

To check the existence of abnormal returns, a benchmark[24] for normal returns (not influenced by a particular event) is necessary and it must be defined correctly. In fact, many models for estimating expected returns can be found in the literature associated with event study methodology. The precision of the abnormal returns has been found to differ according to the alternative methods. However, an extensive study of the literature on the different methods has allowed for underlining the properties and the advantages and disadvantages of each method. The literature concentrates in particular on two models: the *constant mean return model* and the *market model*. The first presumes that the average return on the security is constant over time; the second associates the return on the financial instrument with the return on the relative market portfolio and it is based on the assumption of the normality of the returns. Several authors (Panayides and Gong, 2002; Davidson, Dutia and Cheng, 1989) have demonstrated that the market model gives the more accurate measurement of abnormal returns. Considering that the event of interest in our analysis is the announcement of a corporate merger or takeover that takes place on a specific identifiable day, the event study is based on a daily data frequency (Brown and Warner, 1985)[25]. With regard to the estimation[26] of the parameters α (alpha) and β (beta) for the company in question, an estimation window prior to the event (the announcement of the operation) was used in order to avoid excessive contamination deriving from the effects of possible rumours on the event. Beta - which expresses the behaviour of a security in respect of the market of reference - in statistical terms is the angular coefficient of the straight line of the regression of the return on the equity instrument, compared to the return of the market index used as the benchmark. A beta of 1 indicates that the security moves perfectly in line with the market of reference, whereas a beta of more than 1 indicates an aggressive security that tends to move more than the market, and a beta of less than 1 indicates a more conservative security that is particularly insensitive to market movements and has less marked volatility than the market (Allen, Brealey, Myers and Sandri, 2007). The beta coefficient (β) measures the aptitude of a security to vary according to the market (systematic risk) while the alpha (α), which intercepts the straight line of the regression, expresses the aptitude of a security to vary independently of the market (specific risk). In order to calculate the parameters, an estimation window of 150 days was used, from 170 to 20 days before the event date (date of the announcement) except in some special cases in which the period was reduced by a few days because of the lack of financial data. This occurred because the companies involved in certain M&A deals were still not listed when the financial data were taken. In addition, careful attention was paid to check that during the estimation window, the companies in question had not undertaken or had not been subjected to other extraordinary operations. In fact, those which presented this flaw were eliminated from the sample.

[24] The STOXX Europe 600 Index was chosen as the benchmark, a sub-group of the STOXX Global 1800 Index. With a fixed number of 600 components, the STOXX Europe 600 Index represents a series of companies with small, medium and large equities, located within the following 18 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Iceland, Italy, Luxembourg, Norway, Holland, Portugal, United Kingdom, Spain, Sweden and Switzerland (Source: www.stoxx.com). Furthermore, the choice of benchmark which includes all the sectors was based upon the descriptive analysis on the mixed nature of the data sample..

[25] The objection generally raised, when one decides to opt for this choice, is that the daily returns are not normal. The fact that the returns are distributed in a Gaussian manner is in fact at the basis of the event study methodology.

[26] For the application of this methodology, it is necessary to estimate the parameters by using ordinary least squares (OLS) method.

The first step in the execution of the analysis was to construct a regression between the returns on a specific security *i* and the returns of the market index *m* (the STOXX Europe 600 Index). The angular coefficient, $\hat{\beta}_i$, is the value of the beta while $\hat{\alpha}_i$ is the interception point, on the ordinates axis of the regression straight line. Assuming a constant beta for a given security *i*, we calculate the expected return on the security *i* for every day of the event window according to the following equation:

$$\bar{E}_{it} = \hat{\alpha}_i + \hat{\beta}_i R_{mt} \quad (1)$$

where, $\bar{E}_{it}$ is the expected return[27] at time t, R_{mt} is the daily return of the market index *m* at time *t*, $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the regression parameters.

The effective yield of a security *i* is defined as:

$$R_{it} = \hat{\alpha}_i + \hat{\beta}_i R_{mt} + \varepsilon_{it} \text{ with } E(\varepsilon_{it}) = 0,\ E(\varepsilon_{it})^2 = \sigma_\varepsilon^2 \quad (2)$$

Therefore, abnormal return is defined as the difference between the effective return on a security *i* (R_{it}), observed on the market at a particular time *t* (and conditioned by the particular event), and its expected return $\bar{E}_{it}$ at time *t* (not influenced by the event). Therefore, the abnormal return on a security *i* at time *t* is given by the equation:

$$AR_{it} = R_{it} - \bar{E}_{it} = \varepsilon_{it} \quad (3)$$

where, R_{it} is the actual return on the security *i* at time *t*.

The abnormal return can be considered as the direct occurrence of the unexpected difference in the shareholders' wealth associated with the event. The cumulative abnormal return on a security *i* results from the sum of the daily abnormal returns observed over a given period (*event window)* $[t_0, t_1]$:

$$CAR_i\ (t_0, t_1) = \sum_{t=t_0}^{t_1} AR_{it} = \sum_{t=t_0}^{t_1} \varepsilon_{it} \quad (4)$$

The average abnormal return is the average of the abnormal returns calculated for each observation, for every day *t* of the event window:

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \quad (5)$$

The average of the CARS, however, is defined as cumulative average abnormal returns:

$$CAAR_i\ (t_0, t_1) = \frac{1}{N}\sum_{i=1}^{N} CAR_{i,t_0,t_1} = \sum_{t=t_0}^{t_1} AAR_t \quad (6)$$

In this study, the calculation of CARs is based on an event window of five days (Ismail, 2010; Golubov et al., 2012). These five days include: the two days before the announcement, the day of the announcement (time zero) and the two days after the announcement (-2; +2). The need to include data prior to the announcement is linked to the possibility of rumours which can influence the returns on the shares[28]. The data after the announcement instead, are justified by the possible presence of a time lag between the announcement and the market reaction.

Moreover, as proposed in other research conducted using the event study methodology (Note 19), we opted for an enlarged Estimation Window (-5; +5). This choice comes from two different reasons: on one hand a (-2; +2) Estimation Window is more suitable for the American market rather than for the European one. Maintaining this period even for the European Market would have obliged us to verify the efficiency level of both markets. This kind of research falls outside the aim of this research. On the other hand, an enlarged Estimation Window allows us to verify the robustness of the test conducted.

To check that the resulting CARs are statistically different to zero (i.e. significant from a statistical viewpoint), the statistical *t-test* and its *p-value* are used. The study intends to verify, i.e. the case of zero H_0 (the Null Hypothesis) is:

$H_0 : CAAR_{t_0,t_1} = 0$

$H_1 : CAAR_{t_0,t_1} \neq 0$

By the identification of the p-value, it is then established whether the null hypothesis can be rejected or not. In the case in question, it was decided to refuse the null hypothesis if the p-value was below 5%, accepting the risk of committing a *prima specie* error (refusing the zero hypothesis when it is true) with a probability of 5%. When the p-value is below that threshold, it can be said that the average of the CARs is not statically different from zero.

5.4. Results

We will now go on to analyse the results of the event study and statistical tests[29]. First of all, in accordance with Kale et al. (2003), in order to limit the influence of particular outliers, the observations corresponding to the extreme values (maximum and minimum) in terms of CARs, were eliminated from the sample. In general within the previous literature, a positive effect was found for the target, while the market reaction for the acquirer was negative or insignificant. According to the literature, positive and significant average CARs were observed for the targets, while CARs observed for the bidder companies were in general not significantly different from zero. In the case in point however, it is curious to notice what happens when we test the zero hypothesis considering different time frames (respectively pre and post Lehman). First of all, if one considers the entire time frame of our sample (all of the 229 observations), a strong positive and statistically significant return can be seen for the targets, while the result for the buyer companies is not statistically significant (Table 8). We can see in particular that for the event window (-2; +2) the targets exhibit on average, a cumulative return of 14.90% with a p-value equal to 0.000. The average return for the acquirers instead does not differ from zero and the p-value (equal to 0.251) conforms to the zero hypothesis, namely that the CARs do not differ statistically from zero (Table 8).

[27] It is important to note that the expected return on the shares has been estimated starting from the time frame of reference, used for the estimate of the parameters, which goes from 170 to 20 days before the event. A common mistake in studies of this type is to estimate the parameters through a regression including the date of the event and to then calculate the abnormal returns on the basis of those estimates. This non-rigorous method would underestimate the abnormal returns.

[28] This evidence derives from previous literature: Bradley (1980) shows that the market reaction can be perceived up to ten days before the communication to the public.

[29] The test was carried out using SPSS software.

Table 8. Cumulative Abnormal Return statistics

Full Period		
Window (-2; +2)	*t*	*p value*
Car Target	14,898	0,000
Car Acquirer	(0,297)	0,405
Window (-5; +5)	*t*	*p value*
Car Target	15,532	0,002
Car Acquirer	(0,120)	0,450
Pre-Lehman default		
Window (-2; +2)	*t*	*p value*
Car Target	14,186	0,000
Car Acquirer	0,000	0,979
Window (-5; +5)	*t*	*p value*
Car Target	14,812	0,456
Car Acquirer	0,013	0,040
Post-Lehman default		
Window (-2; +2)	*t*	*p value*
Car Target	16,580	0,000
Car Acquirer	(1,418)	0,037
Window (-5; +5)	*t*	*p value*
Car Target	17,562	0,478

However, if we consider the sample of observations divided into the two time frames we obtain different results. It must be remembered that the 229 observations were divided into 161 pre-crash observations and 68 post-crash observations. With regard to the targets however, the results are not very different. The CARs are strongly positive on average and significant for both time frames. In spite of this, it can be noted that the average returns are slightly higher in the post-crash period (Table 8) and slightly lower in the pre-crash period (Table 8). This could be interpreted by supposing that greater prudence was exercised in the period of the crisis when undertaking M&A operations, when greater prudence would have led to more in-depth assessments and a greater selection in favour of deals that guaranteed greater synergies. However, such conclusions cannot be drawn in respect of buyer companies. It can be seen that the p-values prior to the crash are extremely high for this group, and then fall considerably after the crash, ending up below the 5% level (p-value equal to 0.037). In this case, the resulting average CAR is negative, equal to 1.42%, and statistically significant (Table 8).

The results of the model can also be analysed from another viewpoint. In particular, the average CARs and the respective significances are shown below, after segmenting the sample according to whether the observations correspond to deals with the assistance of first-tier banks or not (Table 9). On average, the targets assisted by first-tier investment banks show a better performance. More specifically, the abnormal cumulative average return for the targets goes from 13.56%, without a top advisor, to 16.79% when there is at least one top advisor (always with a p-value equal to 0.000). On the buy-side instead, the p-values obtained are always above the significance threshold of 5%. However, we can consider the CARs of the bidders which are not assisted by a top advisor within the limits, where the p-value is only slightly above the 5% threshold. In this case, the cumulative abnormal return is negative and equal to -0.93% (with a p-value of 0.051). Lastly, it can only be noted indicatively that the CAR is on average positive in the case of the presence of a first tier investment bank, although without significance statistically, and negative and statistically significant otherwise. The result according to which the cumulative abnormal returns are on average negative for acquirers which do not employ a top advisor is in contrast with Srinivasan (1999), who finds the opposite , although this is in agreement with many other studies present in the literature. On the other hand, unfortunately the p-value does not enable us to make significant conclusions for the opposite scenario.

Table 9. Cumulative Abnormal Return with or without the presence of a Top Tier Investment Bank

Without a Top Tier Investment Bank			***With a Top Tier Investment Bank***		
Window (-2; +2)	*T*	*p value*	*Window (-2; +2)*	*t*	*p value*
Car Target	13,558	0,000	Car Target	16,787	0,000
Car Acquirer	(0,933)	0,051	Car Acquirer	0,456	0,390

However, these single-varied comparisons can be misleading since they do not take into consideration any other variable except advisor reputation. As can be seen in the section on the description of the sample for example, it comes to light that top tier advisors tend to be used for the larger sized transactions. Therefore, both firm-specific and deal-specific variables must be taken into consideration in order to check the effective influence of the "reputation" variable on the dependent variable of our interest (the abnormal return). In this regard, multivariate standard regression models have been developed (see the next section).

5.5. Regression models

The relationships between the advisor's reputation, the bidders' CARs and the acquirers' CARs, are examined below using multivariate regression models[30].

The equation used for this analysis is reported below.

[30] Multi-varied OLS.

$$Car = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \beta_9 x_9 + \beta_{10} x_{10} + \epsilon \quad (7)$$

A central point of the analysis consists in comparing the models obtained for targets and for acquirers. With regard to the dependent variable, CARs were utilised, expressed in percentage form and calculated over a time horizon of five days corresponding to the event window (-2;+2) (Ismail, 2010; Golubov et al., 2012). With regard to the independent variables, it may be noted that in all regression models the same independent variables have been included, both for the analysis concerning the targets and for the analysis regarding the acquirer companies. This choice was made to make the analysis more homogeneous and to test the bank's/advisor's reputation variable specifically, which is hypothesised as significant regardless of whether the analysis is made on the targets or on the acquirers. The independent variables considered are illustrated below:

- *Top-Tier*: this is the variable of greatest interest in this study. It is a dummy variable which assumes a value of one when an investment bank, that has assisted a company in a transaction included in the sample, is placed within the first ten positions of the investment bank classification. It can be noted that when more than one bank participates in the same transaction, the variable assumes a value equal to one unit if at least one of the banks falls within the definition of a first tier investment bank;
- *Same Industry*: this is a dummy variable which takes on the value of one when the target and bidder are involved in a particular special financing operation and when they both operate in the same macro sector (Morck, Shleifer, and Vishny, 1990; Berger and Ofek, 1995);
- *Cross-Border*: this is a dummy variable which takes on a value of one when the target and bidder are not located in the same country (Allen et al., 2004; Doukas and Travlos,1988; Kang, 1993);
- *Tot Advisors*: variable which corresponds to the total number of investment banks which are involved in the deal assisting either the target or acquirer (Iannotta, 2010);
- *Deal Value*: the value of the transaction. This is a continuous variable. Like the preceding variable, the deal value can also indicate the complexity of the operation. Transactions of relatively greater size are considered within the literature as more complex;
- *Toehold*: this variable is a dummy which assumes a value of one when the acquirer already holds at least 5% of the target before the acquisition of a controlling stake (Ismail, 2010);
- *Top vs Not*: this variable, the only one which assumes different values according to whether the model refers to the behaviour of the target rather than the acquirer, is a dummy variable which is given the value of one when one of the counterparties has at least one top tier advisor while the other has only second tier advisors. When both counterparties have at least one first tier advisor, the variable is given the value of zero.
- *Relative Size*: this is the ratio of the total assets of the target against the total assets of the bidder (Rajan, Servaes, and Zingales, 2000);
- *Cash*: this is a dummy variable given the value of one when the payment does not include shares (Travlos, 1987; Ismail, 2010). The reaction of the market is therefore considered better in the case of payments in cash. One explanation is that cash deals are usually associated with the issue of debt, which is an incentive for the management to be more disciplined;
- *Stock*: a variable dummy which takes on the value of one when the acquisition is carried out by means of a share swap (Ismail, 2010; Iannotta 2010).

5.5.1. Results

For both types of companies involved in a merger or a takeover, verification was carried out as to whether the creation of value at the announcement of the M&A deal, was linked to the reputation of the investment bank acting as advisor for the deal and how this phenomenon varies between the period before[31] and after[32] the Lehman Brothers bankruptcy. The proxy of the considered creation of value, the dependent variable, corresponds to cumulative abnormal returns (CARs), calculated according to the market model methodology, over a time window of five days (Ismail, 2010; Golubov et al., 2012).

5.5.2. Results for the target

The regression model corresponding to the pre-Lehman crash period (Table 10) is composed of 161 observations and 10 independent variables. The R2 of 15.7% and the model as a whole is highly significant. The F test, which measures the relationship between all the variables selected and the dependent variable has an associated p-value of almost zero (0.003). Analysing the significance of the variables, it can be observed that only three of the ten variables considered are significant, *Stock*, *Toehold* and *Cross-Border*, respectively significant at the 1%, 5% and, within the limits of acceptability, at the 10% levels. The negative coefficient of the *Stock* variable, in line with Ismail (2010), indicates that acquisitions financed by shares result in lower returns for the shareholders of the company acquired. The negative coefficient of the dummy variable *Toehold* indicates that the presence of a toehold, i.e. already owning some of the equity of the target company, reinforces the buyer company's position in the negotiating phase. This can depend on the fact that the toehold, favouring a greater availability of information, reduces possible problems of information asymmetries and allows the buyer to reach a better and more correct evaluation of the target.

[31] The four-year period goes from 15/09/2004 to 15/09/2008, the day on which the Lehman Brothers bankruptcy procedure was opened.

[32] This time frame of 4 years again, goes from 15/09/2008, the day on which the Lehman Brothers bankruptcy procedure was opened, until 15/09/2012.

Table 10. Target CAR: the regression model corresponding to the pre-Lehman crash period

R^2		0.157
Significativity		0.003*
R^2 adjusted		0.157
Parameter	***β***	***Significativity***
(Constant)	0.177	0
Top-Tier	(0.002)	0.953
Same Industry	0.001	0.963
Cross-Border	0.049	0.078**
Toehold	(0.075)	0.046*
Deal Value	(0.000)	0.938
Tot Advisors	(0.002)	0.827
Relative Size	0.006	0.602
Stock	(0.109)	0.007*
Cash	0.002	0.967
Top vs Not	0.002	0.97

** Level of significativity from 1 to 5%*
*** Level of significativity up to 10%*

Table 11. Target CAR: the regression model corresponding to the post-Lehman crash period

R^2		0.281
Significativity		0.028
R^2 adjusted		0.155
Parameter	***β***	***Significativity***
(Constant)	0.388	0.001
Top-Tier	0.227	0.004*
Same Industry	(0.087)	0.143
Cross-Border	0.057	0.343
Toehold	(0.031)	0.618
Deal Value	(0.000)	0.099**
Tot Advisors	(0.041)	0.055
Relative Size	(0.016)	0.031
Stock	(0.015)	0.847
Cash	(0.107)	0.193
Top vs Not	(0.002)	0.987

** Level of significativity from 1 to 5%*
*** Level of significativity up to 10%*

Lastly, it must also be pointed out that the multivariate regression relative to the time frame prior to the Lehman collapse shows no evidence indicating that the identity and reputation of the investment bank is an important variable in determining the market reaction and the consequent creation of value for the target on the announcement of M&A deals. However, the results of the post-Lehman regression model (Table 11)[33] are different, and in fact show an inverse scenario. Above all it is to be noted that the R2 considerably improves, reaching 28.1%. With the increase in R2, the adjusted R2 has also increase, albeit to a lesser extent, from 10.1% to 15.5%. Considering that the number of variables does not change, the less than proportional increase of the R2 could derive from the fewer observations on which the new model is based upon (the sample relative to the post-bankruptcy period is, in fact, composed of only 68 observations). The p-value associated with the F test increases slightly but it nevertheless remains below the 5% threshold. Having said this, it is important to underline that in this new scenario the model indicates a strongly positive and significant effect of the investment bank's reputation (the advisor's reputation) on the cumulative abnormal returns (CARs) of the target. More specifically, with an error probability of 0.4% (p-value associated to the t-test equal to 0.004), the coefficient of the *Top-Tier* variable indicates that the presence of at least one top tier bank among the target's advisors contributes to increasing the wealth of the latter's shareholders by about 22.7%[34]. With reference to the same time window as that considered in the regression model, the targets assisted by a top investment bank obtain average cumulative returns of 25.47% (about 12.6% more than the average CARs without at least one top advisor).

Top banks often push their customers towards acquisitions that may even be far from what would be considered rational grounds (on which decisions regarding M&A should be based), just to earn fees.

The analysis shows that the certification effect guaranteed by the investment banks (especially by those with an extremely high reputation) was not effective in the case of the more recent wave of M&As.

Reviewing the other variables, it can be observed that the relative size coefficient concerning the relative dimensions of the target is at a significant minus 5%: the operations for the acquisition of control and/or the integration of a target which is relatively large compared to the acquirer are more complex and lead to the creation of less value. Similarly, the negative coefficient of the variable linked to the total number of advisors involved in the operation, although barely above the significance threshold of 5%, indicates that the more advisors there are around the negotiating table, the less value will be created. The presence of a high number of investment banks can depend on a greater complexity of the deal, which results in a greater difficulty to release value through the operation. Lastly, although border line in respect to a significance value of 10%, it can be noted that the *Deal Value* variable has a zero coefficient. This means that the size of an operation has been found to have no impact on the creation of value for the shareholders.

5.5.3. Acquirer Results

As in the case of the analysis of target companies, it can also be noted for the buyer companies that there are two very different results depending on whether the model refers to the pre or post Lehman crash period. More specifically, the model relative to the pre-bankruptcy period (Table 12), as a whole, is not significant. The F test on the joint significance of the coefficients of the regression is equal to 1.832, with an associated p-value equal to 0.06[35]. Similarly to the scenario observed for the targets, the multi-varied regression model in the case of the acquirer, suggests that the advisor's reputation is an extremely important factor influencing the creation of value for the shareholders.

[33] The result confirms the analysis carried out on the CARs (Appendix "A": Table A-3 and Table A-4) relative to the post-bankruptcy time frame.

[34] The tables (Table A-3 and Table A-4) in the Appendix show that this phenomenon is also confirmed by the analysis of the CARs.

[35] It is not possible to link this phenomenon to a problem of the size of the sample compared to the relatively high number of predictors considered, since in the case of the targets, the historically accepted general rule is satisfied, according to which at least 10 subjects per predictor are required (Harris, 1985).

Table 12. Acquirer CAR: the regression model corresponding to the pre-Lehman crash period

R^2		0.109
Significativity		0.060
R^2 adjusted		0.049
Parameter	***β***	***Significativity***
(Constant)	(0.020)	0.206
Top-Tier	(0.012)	0.285
Same Industry	(0.002)	0.866
Cross-Border	(0.000)	0.996
Toehold	0.020	0.096
Deal Value	0.000	0.713
Tot Advisors	0.005	0.084
Relative Size	(0.001)	0.713
Stock	0.016	0.197
Cash	(0.010)	0.454
Top vs Not	0.020	0.149

** Level of significativity from 1 to 5%*
*** Level of significativity up to 10%*

In the case of acquirers pre-Lehman, as seen for the model relative to the targets, no empirical evidence can be found to indicate that the reputation of advisors plays an important role in determining the creation of value for the shareholders. For that matter, the result is also confirmed by the t-test carried out on the CARs involving the segmentation of the sample in respect to both the period and the presence or absence of an advisor[36]. Returning to the model, it is possible to note the positive sign of the coefficient of the *Toehold* variable that is within the limits of significance. Contrary to what happens for the targets, buyer companies benefit from a toehold in the equity of the companies that they wish to takeover. The existence of a toehold of at least 5% in the equity of the target, results in a CAR for the acquirer's shares of more than two percentage points. The output relative to the post-crash period (Table 13) however, takes on particular importance. Compared to the previous model both the R2 and the adjusted R2 increase considerably and take on important values. In particular, R2 increases from 10.9% to 38.0% while the adjusted R2 increases from 4.9% to 27.2%. Furthermore, the model as a whole is associated with a p-value below the 1% threshold. In addition, the positive and significant coefficient (with an associated p-value of 0.032) of the *Top-Tier* variable, which is the variable with the greatest weight in the model, indicates that advisors with a higher reputation (a greater market share) bring a benefit to the shareholders in terms of CAR of 4.4%. Consistently with the literature that attributes the major part of the deal benefits to target companies, it is not surprising that the creation of value for the bidder that avails of a primary investment bank is considerably lower than that of the target. As pointed out for the targets, shareholders' wealth is positively influenced by the engagement of a top investment bank also in the case of bidders for the post-Lehman period[37].

Table 13. Acquirer CAR: the regression model corresponding to the post-Lehman crash period

R^2		0.380
Significativity		0.001
R^2 adjusted		0.272
Parameter	***β***	***Significativity***
(Constant)	0.008	0.77
Top-Tier	0.044	0.032
Same Industry	(0.035)	0.014
Cross-Border	0.012	0.42
Toehold	(0.009)	0.532
Deal Value	0.000	0.676
Tot Advisors	(0.009)	0.104
Relative Size	(0.006)	0.001*
Stock	0.027	0.167
Cash	0.032	0.092
Top vs Not	(0.026)	0.17

** Level of significativity from 1 to 5%*
*** Level of significativity up to 10%*

However, looking at the coefficients of the other variables which are significant, the negative coefficient of the *Same Industry* variable is quite surprising. In preceding literature (Morck et al., 1990; Berger and Ofek, 1995) it was shown that the creation of value for the buyer company is greater in cases where the target operates in a business connected to that of the said buyer. However in the model outlined above, an acquisition carried out within the same sector would lead to a reduction of value for the shareholders equal to 3.5%. This evidence supports the hypothesis of the creation of value by corporate diversification. Furthermore with regard to the *Stock* variable, although it exhibits a high p-value of almost 10%, the positive coefficient of this variable indicates that buyer companies, unlike seller companies, benefit from payment in the form of shares. This result is understandable, if one considers that bidders usually offer payment in the form of shares when they believe that their own shares are over-valued by the market (it is to be noted that this subject is discussed in the literature with regard to information asymmetries)[38].

6. CONCLUSIONS

This study, building upon existing empirical evidence in the literature has questioned and analysed the role of investment banks in M&A operations, specifically with regard to the capacity of investment banks with the best reputations to offer their customers services of a superior quality and a corresponding creation of greater value for shareholders. The research focused on the transactions carried out among listed companies inside two time frames which were symmetrical to each other with respect to the Lehman Brothers bankruptcy. The analysis highlighted that the presence of a top tier investment banks post-Lehman is associated with higher shareholder returns of both target and buyer companies, thus supporting the "superior deal hypothesis". However, this evidence can be found only in the "post financial crisis" period (post-Lehman). Prior to the Lehman collapse, there is no specific evidence of a

[36] Observing the tables in Appendix "A" (Table A-2 and Table A-3), it can be seen that in spite of the change of sign in the average of the CARs in the presence of a top advisor, it is not possible to draw significant conclusions (in view of the very high p-value).

[37] This evidence is also supported by what emerges from the t-test on the CARs (Appendix "A": Table A-3 and Table A-4). The CARs of the bidders which take avail of a top investment banker in fact achieve better performance.

[38] In Appendix B, the correlation matrices between the variables can be consulted. To give further significance to the models, it is observed that the scatter plots of the residuals of the regressions in Appendix "C" (Figure C-3 and Figure C4) show that there is no particular evidence of heteroscedasticity. The figures trace good behaviour of the residuals: they are alternatively above and below zero and they are distributed in a non-systematic manner.

correlation between the presence of top tier investment bank and the creation of higher value for shareholders. The term "financial crisis" is used to refer to a concept which is difficult to define accurately; the research wished to express the idea of a different economic/financial context, identifying the Lehman Brothers bankruptcy as the key signal which started off a period featuring deep changes of a structural nature within the investment banking sector. The certification effect of investment banks relating to M&A operations has been found to have no significance in the pre-Lehman crash period. This result can be justified if one considers the irrationality which prevailed at the time of the more recent wave of M&A operations and the context in which these deals have taken place (huge availability of cash and low yields). The number of deals processed and the positive sentiment which featured in the capital markets in the years prior to the explosion of the crisis, supports the idea that in such a context the advisor's reputation and the assurance to the market about these deals emanating from the certification effect, were actually of little importance. The irrational attitude of the pre-crash period is confirmed by the change of market behaviour after the start of the financial crisis. The more careful and rational market has given greater importance to and has placed greater confidence in the banking institutions which have demonstrated before and after the crisis that they have maintained strong reputations based upon success in managing the corporate control market. Therefore, in a time of crisis, the ability of top tier investment banks to construct and manage better M&A operations has enabled the generation of greater synergies and benefits for their customer companies, with a consequent growth in value for shareholders. Furthermore, the results of the research model, especially post Lehman bankruptcy, confirm the thesis (Chemmanur and Fulghieri, 1994) that states that top tier banks are superior in processing and producing information which can reduce information asymmetries between the diverse players in the market. Thus, the higher the banks reputation and credibility is perceived to be the greater the certification and validation effect will be in the M&A deals that they are involved in.

Such a result contrasts with what emerging in other contributions focusing on different business areas of the investment banking industry, namely securities issuances, where reputation seems showing a decreasing role when compared to other key success factors more consistent with technological changes occurred in financial markets (Morrison *et al.*, 2014). Undoubtedly, the investment banking industry is still an opaque – if not black – box requiring further research as well as empirical analyses with great deal of possible implications for policy makers and regulators.

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APPENDICES

Appendix A. CARs e t-test

Table A-1. One-Sample Test

	Test Value=0					
	t	*df*	*Sig. (2-tailed)*	*Mean Difference*	*95% Confidence Interval of the Difference*	
					Lower	*Upper*
CAR TARGET (-2, +2)	7,871	85	,000	,13937105	,10416368	,17457841
CAR ACQUIRER (-2, +2)	-,548	84	,585	-,00315742	-,01461018	,00829535

PERIODO PRE (0) POST (1) LEHMAN = 0, RANKING FIRST TIER (1) SECOND TIER (0) ADVISOR = 0

Table A-2. One-Sample Test

	Test Value=0					
	t	*df*	*Sig. (2-tailed)*	*Mean Difference*	*95% Confidence Interval of the Difference*	
					Lower	*Upper*
CAR TARGET (-2, +2)	7,285	74	,000	,14471660	,10513366	,18429954
CAR ACQUIRER (-2, +2)	,602	75	,549	,00376588	-,00869805	,01622981

PERIODO PRE (0) POST (1) LEHMAN = 0, RANKING FIRST TIER (1) SECOND TIER (0) ADVISOR = 1

Table A-3. One-Sample Test

	Test Value=0					
	t	*df*	*Sig. (2-tailed)*	*Mean Difference*	*95% Confidence Interval of the Difference*	
					Lower	*Upper*
CAR TARGET (-2, +2)	4,602	47	,000	,12878323	,07248531	,18508115
CAR ACQUIRER (-2, +2)	-2,833	38	,007	-,02279384	-,03908364	-,00650404

PERIODO PRE (0) POST (1) LEHMAN = 1, RANKING FIRST TIER (1) SECOND TIER (0) ADVISOR = 0

Table A-4. One-Sample Test

	Test Value=0					
	t	*df*	*Sig. (2-tailed)*	*Mean Difference*	*95% Confidence Interval of the Difference*	
					Lower	*Upper*
CAR TARGET (-2, +2)	5,180	19	,000	,25470290	,15177807	,35762773
CAR ACQUIRER (-2, +2)	0,662	28	,513	,006625272	,01386418	,02711473

PERIODO PRE (0) POST (1) LEHMAN = 1, RANKING FIRST TIER (1) SECOND TIER (0) ADVISOR = 1

Appendix B. Correlation Matrices between the Variables

Table B-1. Correlation Coefficients

Model	*Top vs Not*	*Stock*	*Same Industry*	*Deal Value*	*Toehold*	*Cross-Border*	*Relative Size*	*Tot Advisors*	*Top-Tier*	*Cash*
Top vs Not	1,000	-,108	,100	,139	,184	,035	-,013	,179	-,540	-,133
Stock	-,108	1,000	,015	,032	-,212	,034	-,168	,075	,106	,714
Same Industry	,100	,015	1,000	,067	,103	,035	-,083	-,104	-,118	-,008
Deal Value	,139	,032	,067	1,000	,196	-,138	-,039	-,441	-,275	,029
Toehold	,184	-,212	,103	,196	1,000	-,049	,046	-,134	-,216	-,196
Cross-Border	,035	,034	,035	-,138	-,049	1,000	,111	-,001	-,117	-,059
Relative Size	-,013	-,168	-,083	-,039	,046	,111	1,000	-,082	,028	,046
Tot Advisors	,179	,075	-,104	-,441	-,134	-,001	-,082	1,000	-,174	,071
Top-Tier	-,540	,106	-,118	-,275	-,216	-,117	,028	-,174	1,000	,117
Cash	-,133	,714	-,008	,029	-,196	-,059	,046	,071	,117	1,000

PERIODO PRE (0) POST (1) LEHMAN = 0 / DEPENDENT VARIABLE: CAR TARGET (-2,+2)

Table B-2. Correlation Coefficients

Model	*Top vs Not*	*Stock*	*Toehold*	*Deal Value*	*Same Industry*	*Cross-Border*	*Relative Size*	*Tot Advisors*	*Top-Tier*	*Cash*
Top vs Not	1,000	-,097	,070	,196	-,102	,114	,016	,254	-,540	-,073
Stock	-,097	1,000	-,155	-,014	-,023	-,107	-,027	,101	,057	,779
Toehold	,070	-,155	1,000	,047	-,210	-,025	-,316	-,135	-,069	-,257
Deal Value	,196	-,014	,047	1,000	-,058	-,070	-,001	-,031	-,441	-,038
Same Industry	-,102	-,023	-,210	-,058	1,000	,021	,254	,074	-,047	,112
Cross-Border	,114	-,107	-,025	-,070	,021	1,000	,037	-,188	-,156	-,144
Relative Size	,016	-,027	-,316	-,001	,254	,037	1,000	,124	,005	,144
Tot Advisors	,179	,075	-,104	-,441	-,134	-,001	-,082	1,000	-,174	,071
Top-Tier	-,540	,106	-,118	-,275	-,216	-,117	,028	-,174	1,000	,117
Cash	-,133	,714	-,008	,029	-,196	-,059	,046	,071	,117	1,000

PERIODO PRE (0) POST (1) LEHMAN = 1 / DEPENDENT VARIABLE: CAR TARGET (-2,+2)

Table B-3. Correlation Coefficients

Model	*Top vs Not*	*Toehold*	*Cross-Border*	*Same Industry*	*Cash*	*Tot Advisors*	*Relative Size*	*Deal Value*	*Top-Tier*	*Stock*
Top vs Not	1,000	,105	,103	,149	-,062	,119	,027	,214	-,539	,019
Toehold	,105	1,000	-,049	,099	-,194	-,139	,046	,190	-,209	-,218
Cross-Border	,103	-,049	1,000	,041	-,062	,004	,113	-,140	-,108	,033
Same Industry	,149	,099	,041	1,000	-,005	-,103	-,078	,075	-,121	,022
Cash	-,062	-,194	-,062	-,005	1,000	,073	,048	,028	,138	,712
Tot Advisors	,119	-,139	,004	-,103	,073	1,000	-,082	-,439	-,198	,067
Relative Size	,027	,046	,113	-,078	,048	-,082	1,000	-,033	,031	-,156
Deal Value	,214	,190	-,140	,075	,028	-,439	-,033	1,000	-,248	,031
Top-Tier	-,539	-,209	-,108	-,121	,138	-,198	,031	-,248	1,000	,168
Stock	,019	-,218	,033	,022	,712	,067	-,156	,031	,168	1,000

PERIODO PRE (0) POST (1) LEHMAN = 0 / DEPENDENT VARIABLE: CAR ACQUIRER (-2,+2)

Table B-4. Correlation Coefficients

Model	*Top vs Not*	*Toehold*	*Stock*	*Deal Value*	*Same Industry*	*Tot Advisors*	*Cross-Border*	*Relative Size*	*Cash*	*Top-Tier*
Top vs Not	1,000	,060	-,033	,357	,035	,242	,043	,019	,025	-,666
Toehold	,060	1,000	-,155	,055	-,210	-,121	-,016	-,318	-,256	-,080
Stock	-,033	-,155	1,000	-,034	-,029	,069	-,129	-,020	,777	,107
Deal Value	,357	,055	-,034	1,000	-,086	,002	-,032	-,004	-,058	-,430
Same Industry	,035	-,210	-,029	-,086	1,000	,055	,005	,263	,097	,010
Tot Advisors	,242	-,121	,069	,002	,055	1,000	-,091	,103	,189	-,452
Cross-Border	,043	-,016	-,129	-,032	,005	-,091	1,000	,019	-,148	-,272
Relative Size	,019	-,318	-,020	-,004	,263	,103	,019	1,000	,149	,027
Cash	,025	-,256	,777	-,058	,097	,189	-,148	,149	1,000	,003
Top-Tier	-,666	-,080	,107	-,430	,010	-,452	-,272	,027	,003	1,000

PERIODO PRE (0) POST (1) LEHMAN = 1 / DEPENDENT VARIABLE: CAR ACQUIRER (-2,+2)

Appendix C. Scatterplots of Residuals

Figure C-1. Scatterplot of Residuals: Target

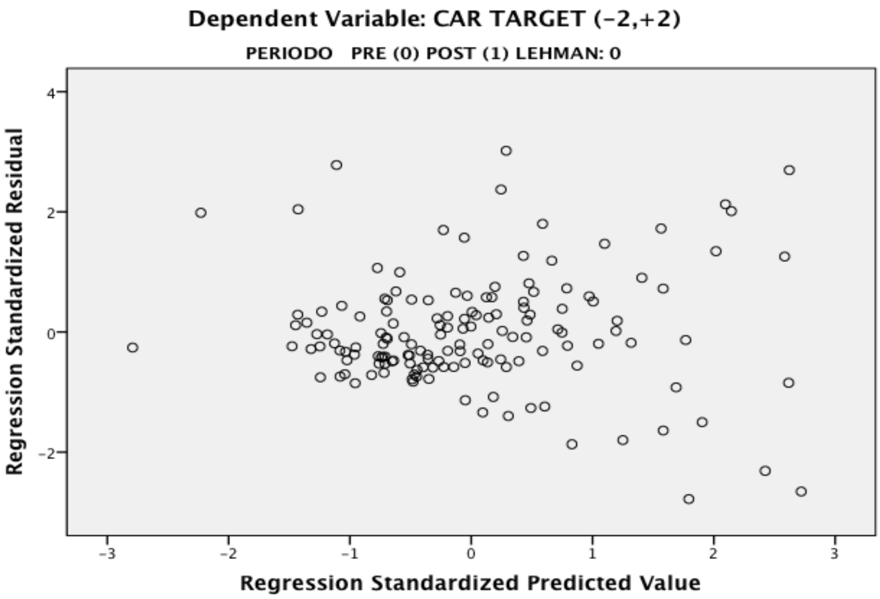

Figure C-2. Scatterplot of Residuals: Target

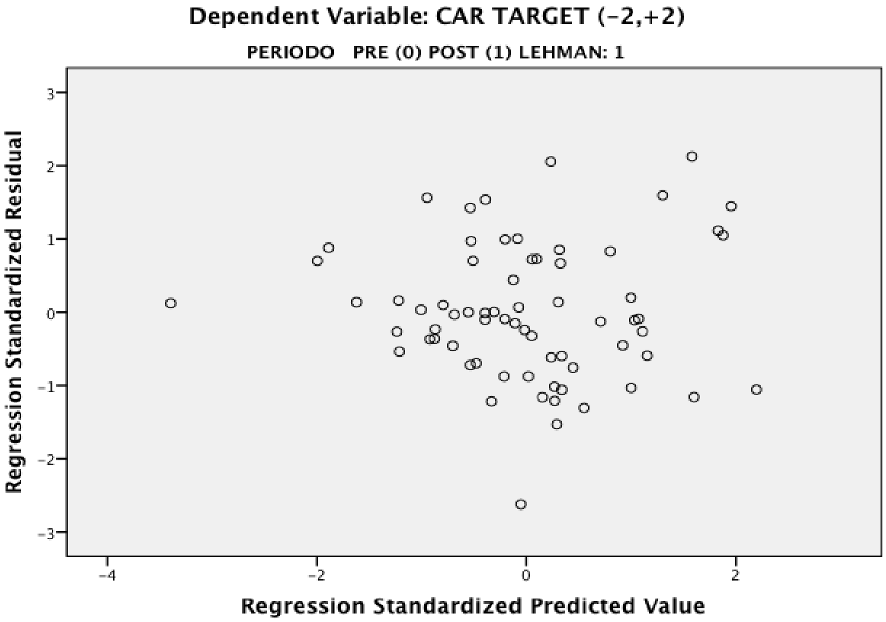

Figure C-3. Scatterplot of Residuals: Acquirer

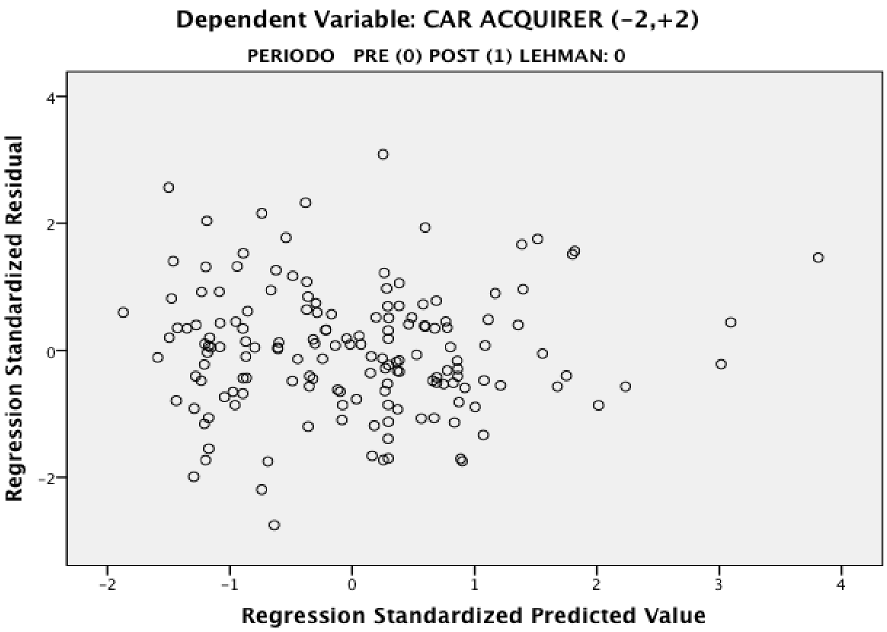

Figure C-4. Scatterplot of Residuals: Acquirer