

APPENDICES

(1) Summary of Previous Studies

<u>Author /Year</u>	<u>Objectives</u>	<u>Dependent Variables</u>	<u>Independent Variables</u>	<u>Source Of Data</u>	<u>Sample & Period</u>	<u>Country</u>	<u>Method</u>	<u>Main Results</u>
(Glaister, 2008)	Verify the nature of strategic planning and performance of companies	Company performance	Formal strategic planning	Questionnaires	135 usable Questionnaires from 135 company	Turkish	Lisrel causal modelling	A strong correlation between formal strategic planning and corporate performance. A relationship between environmental turbulence, organizational structure and company size with formal strategic planning and company performance.
(Martí, 2008)	Analyze the contribution of human resource commitment (HR) practices in the performance of companies	Firm performance	Human resource commitment (HR) practices	Questionnaires	Survey of 156 Spanish companies & Bradstreet largest firms with more than 250 employees	Spanish	Modelling the structural equation	Performance of the company is strongly related to the intensity of telework adoption, functional flexibility, and internal numerical flexibility, and negatively related to external numerical flexibility
(Paulo, 2008)	Identifying the relation between the size of companies and their performance	Performance (ratio between operating income and total assets)	Company size Debt, Liquidity Risk Asset structure	Bradstreet consultants, concerning the 500 biggest Portuguese companies.	Small and medium sized Portuguese companies 1999 - 2003	Portuguese	Dynamic panel capabilities	Debt and the level of fixed assets have a negative impact on performance, and the separation between management and ownership is positively affected. No relationship between liquidity, risk and property control with the performance of Portuguese SMEs.
(Mohd Dali, et. Al., 2008)	Identify the performing and non-	Shariah-compliant	20 financial ratios	Bursa Malaysia	Individual Shariah compliance companies'	Malaysia	Multiple discriminate (MDA) and	The results show that the inventory turnover and credit turnover/day ratios could distinguish between the

	performing companies	companies performance			Performances. In this case, financial ratio in year 2005		regression analysis	performing and non-performing Shariah compliant companies in the plantation industry.
(Grund & Westergaard2008)	Explore the link between the age structures of employees and the performance of the company	Net revenue less purchase of goods	Mean age and the Standard deviation of the employees' age	Data of private sector companies	Private sector companies in Denmark with at least 20 employees 1992-1997	Denmark	Average age and standard deviation	There was a pyramidal or inverse (u-shaped) correlation between mean age and standard deviation of age, and between average age and value added per employee
(Ding, akhtar, & ge, 2009)	Investigate impact of inter- and intra-hierarchy wage dispersions on the performance of the company	Firm performance on a 5-point scale 1-5 (very low to very high)	Wage dispersion within and between workers & managers	Questionnaires	Public financial data for Chinese companies	China	Multiple regression analysis	Wage dispersion between managers and workers was instrumental in implementing property-rights reform and linked their rewards to strong performance
(Hall, 2009)	Relationship and impact of stock turnover on corporate stock performance	Stock price	Inventory turnover ratios	Scot trade stock exchange	20 companies in the retail industry in the USA	USA	Inventory turnover ratio and its implementation	Here 80 annual turnover ratios of the annual inventory were observed as well as 80 annual stock price changes
(Hunnes, 2009)	Investigating the net relationship between internal wage dispersion and company performance	Profit & Production value	White-collar workers	Confederation of Norwegian Enterprise	Governmental administrative registers Norwegian firms from 1986 to 1997.	Norwegian	Descriptive analysis and multiple regression analysis	No relationship between wage dispersion and company performance despite the increasing wage dispersion interior.
(Danvila & rodri, 2009)	Determine the impact of the companies' efforts in investing staff training on their economic performance	ROA & ROE	The time Spent on training per employee	Sector of private security companies in Spain devoted to surveillance	40 companies From 1996 to 2004. We therefore have 360 Observations per variable.	Spanish	Ordinary Least Square	All models used provide clear empirical support for the hypothesis that the training activities have a positive impact on the performance of the company.
(Demeter, 2009)	To measure the relationship between three functions of the supply chain.	ROS, ROA, and market share	Management, leadership, marketing,	Questionnaire to CEO, Marketing, finance and	financial statement of 1300 companies and the survey took place in May 2004	Hungary	Using Discriminant analysis	Marketing and manufacturing have a significant impact on the company's performance over logistics.

			finance, and operations.	operations managers.				
(Chiva, 2009)	Analyze the impact of investment in design and mediate the skills of design management on company performance	Growth Profitability	Design investment Basic & Specialized skills	Questionnaires	101 Completed Spanish firms and 81 from Italian firms	Spanish and Italian firms	Structural equation modelling method	Design management enhances consistent performance. The investment in design is positively correlated with design management. Design management also plays an important role in determining the impact of investment in design on the performance of the company.
(Zéghal & maaloul, 2010)	Impact of intellectual capital (IC) on the performance of the company's	Economic (oi/s) Financial (ROA) Stock market (MB)	Value added human capital coefficient book value of the net assets	All UK companies Listed on the LSE	300 companies in the UK, divided into high technology, traditional and service industries During 2005.	UK	Using correlation and multi-linear regression analysis	Intellectual capital index (IC) has a positive impact on economic and financial performance, and that the relationship between IC and the performance of the stock exchange is important only for high-tech industries. The IC used is a major factor for financial performance and performance of the stock exchange.
(Keramati & Behmanesh, 2010)	Measuring the effects of the use of information technology on the performance of companies	Customer results, Employee results, Operational performance indicators, Growth	Planning Operation Quality control	Industries company's	200 Iranian car parts suppliers	Iran	Canonical correlation analysis	The relationship between the performance of the company and the degree of use of information technology in finance, management and planning is stronger than other aspects of the use of information technology.
(Shao, 2010)	Measuring the effects of the structure of the board of directors on performance	Return on assets Return on equity	Board size, Board composition, Board interlocks, Staggered boards	Securities exchange commission (SEC)	All publicly traded media companies filed with the USA	USA	Using correlation and multi-linear regression analysis	The level of board interlocks and the proportion of non-independent directors on the board were positively correlated with corporate performance. Adoption of staggered boards had a positive impact on the return on media assets.

(Steinfeld, Scupola, & López-Nicolás, 2010)	Investigate the uses of ICTS in the performance of the company.	Companies performance	Uses of ICTS	Online survey was sent to biotechnology companies in the Medicon valley biotechnology region	244 biotech companies located in Medicon valley, which accounted for about all of the biotech companies	Denmark and southern Sweden	Regression results predicting market exposure and market performance .	The use of ICTS and online databases, such as: intranets to enhance staff access to information and education, and collaborative tools to connect with researchers outside the company aim to reach and enhance human and intellectual capital, enable companies to perform better.
(Kang, lee, & huh, 2010)	Investigate the impact of positive and negative social responsibility activities on financial performance	ROA ROE Tobin's q	Positive CSR Activity CSR Negative CSR activity	Annual accounting and financial data CSR data from KLD research and analytics'	Companies listed on the S&P500 and Russell 3000 indices. The KLD from 1991 to 2007	USA	Pearson's correlation analysis. Pooled regression analysis	A positive impact of CSR on the financial performance of hotels and restaurants. No significant impact of negative CSR activities on firm value measured by PER and Tobin's q. For the airline industry, the study found the existence of a negative impact of positive CSR activities and no significant impact of negative CSR activities on profitability.
(Renders, Gaeremynck, & Sercu, 2010)	Verifying the relationship between corporate governance classifications and company performance	Tobin's q (q), market to sales ratio, market to book value, ROA, ROE	Board structure, Shareholder rights, and disclosure on corporate governance.	Companies and financial data from world scope.	The largest 300 European companies over 300 criteria. The period 2000-2003.	European	Descriptive statistics and panel data analysis	A significant positive correlation between corporate governance ratings and performance. Improvements in corporate governance ratings over time reduced marginal benefits in terms of performance.
(Isik, Arditi, Dikmen, & Birgonul, 2010)	Measuring the impact of resources and capabilities strategic decisions, project management competencies and strength on the company performance	Financial perspective, Learning and Growth, Perspective, Internal business Perspective, Customer Perspective	Resources and Capabilities, Project Management Competencies, Strategic Decisions	A survey for Turkish contractors	A questionnaire survey was administered to 73 Turkish contractors	Turkey	Structural equation models	The resources, capabilities and strategic decisions have a significant and direct impact on the performance of the company, while the competencies of project management and the strength of relations with other parties affect the performance of the company indirectly.

(Ciptono & Ibrahim, 2011)	Aimed to analyze the main factors of quality management practices with the performance of the company	CFP (survey) CNFP (survey)	Quality management practices (QMPS) Global corporate practices (WC C) Operational excellence practices (OE)	A survey of 140 strategic business units (SBUS)	49 oil and gas contracting companies	Indonesia	Coefficients of variables	Concluded that all TQM practices have a positive and significant indirect relationship to the financial performance of companies.
(Williams & Naumann, 2011)	Verify the relationship between customer satisfaction and company performance	Retention, revenue, return on equity, share price and Tobin Q	Customer satisfaction	The quarterly survey data, the published financial literature, and Company reports	Fortune 100 firm based in the USA. Five-year period.	USA	Descriptive statistics and correlation Simple cross Tabulations	Strong correlation between levels of satisfaction with the company's financial and market performance, through strong links between customer satisfaction, retention, revenue, return on equity, share price and Tobin value.
(Abidin, Ahmad-Zaluki, & Ilona, 2011)	Aimed at analyzing the effect of board quality on the performance of the company	Company performance (ROA)	-board quality, shareholding, independence, Audit committee Independence	Annual reports of Indonesian companies	291 companies	Indonesia	Regression and multivariate analysis	Negative relationship between the independence of the board of directors and the performance of the company, leverage and volume have a significant impact on the company's performance.
(Cetindamar & Pala, 2011)	Analyze the impact of the chief technology officer (CTO) on the performance of the company.	Financial performance criteria: profitability	Fulfilment of CTO roles, Existence of a CTO, Human capital factor, Social capital factors	Survey	On a survey of 49 companies in electronics and machinery industries in turkey	Turkey	Results of the ordered logistic regression	The implementation of CTO roles leads to increased profitability of the company, and that the presence of a distinct technical management centre increases profitability. The role of social capital theory in explaining how to increase company performance when placing a CTO / CTO-proxy manager higher on the organizational ladder.
(Chuang, 2011)	Verify the relationship of investment in R & D	Yearly net income Sales	Company's yearly R&D expense,	Panel data come from the Compustat and	Tested on us-Taiwanese technology-	Taiwan	Descriptive statistics and	A strong relationship between investments in research and development and performance of the company, and

	and company performance		Yearly change of GDP	Taiwan economic journal (TEJ)	intensive data from 1998-2003		regression analyses	also the performance reflects the level of financial resources available to be allocated to more investments value.
(Huo, 2012)	Verify the impact of supply chain integration (SCI) on the performance of the company	Customer-oriented performance Supplier-oriented performance	Internal, Customer, and Supplier integration	Questionnaire	617 Chinese companies	China	Structural equation modelling method	Internal integration improves external integration and that internal and external integration enhances the performance of the company directly and indirectly.
(Wilson, wright, Siegel, & Scholes, 2012)	Assess the economic and financial performance of private equity-backed acquisitions in the UK	ROA	Competition, industry risk, and company age	Companies' reports	1995–2009	U K	Multivariate recession models	Positive differences between 5-15% in productivity and about 3-5% in profitability for acquisition companies compared to non-performing companies on the acquisition. The revenue growth and employment of Pe -supported firms was positive during the sample period.
(Horobet, 2012)	Understand the dynamic trade-offs between efficiency, profitability, financial leverage and the company's performance	Sharpe ratio Ratio Treynor	Total asset turnover, Margin profit, Return on Assets, leverage, return on Equity earnings per Share, price earnings Ratio	Bucharest stock ex-change	34 companies 2002 and 2009	Romanian	Panel data analysis	The study found that the performance of Romanian companies was fluctuating significantly from year to year, and the fundamental analysis affects the performance of companies in the capital market at the level of simpler indicators, which may indicate the financial maturity low for investors in the market.
(Zeitun & al-kawari, 2012)	Measure the impact of the structure of government ownership, commercial risks and financial leverage on the performance of the company	Return on assets Return on equity	Government ownership, Firm size, Growth rate, Financial leverage, Business risk, Firm age	Publicly traded companies from GCC countries (Qatar, Saudi Arabia, Oman, Bahrain, and Kuwait)	191 companies from 1999-2006	Qatar	Regression panel data analysis Includes pooled cross-sectional and	That government ownership affects the performance and value of GCC companies, and a significant affects return on investment. There is no relationship between the leverage and the capital structure with the performance of the company.

							time-series data for 191	
(Alipour, 2012)	To know the role of intellectual capital (IC) and its relation to the financial performance	Return on assets	Value added capital, Value added human capital, Structural capital, value added intellectual coefficient	Insurance companies sector	39 companies, during the period 2005-2007	Iran	Regression model (partial least squares)	The value-added intellectual capital and its components have a very positive relationship with the profitability of companies.
(Chou, Chung, & Yin, 2013)	To ascertain the impact of senior management attendance at board meetings on corporate performance	Return on assets (ROA), Earnings per share (EPS), Sales to assets ratio (sales), Sales growth rate (growth)	Board meeting attendance, Director, Board and Ownership variable Firm variable	The Taiwan stock exchange	All non-financial firms listed on the Taiwan stock exchange (TWSE) in 2006 and 2007	Taiwan	Descriptive statistics Correlation between main variables	The results showed that the cash flow of the largest shareholder positively affects the attendance of the board of directors, and there was a statistically significant positive impact between the presences of managers on the performance of the company.
(Syed & Xiaoyan, 2013)	Verifying the relationship between knowledge management practices and company performance	Company performance	Employee learning, Management, Innovative, Culture, and Development management	Questionnaire	412 employees in various management positions	China	Correlation and regression analysis	All selected knowledge management was positively associated with the company's performance, and core competence management was the strongest indicator of the company's performance.
(Psomas, Pantouvakis, & Kafetzopoulos, 2013)	Identify and measure the effectiveness of ISO 9001, impact on the performance dimensions	Performance of companies	Prevention of non-conformities, continuous improvement and customer	From the quality managers of the companies through a structured questionnaire	600 quality managers belonging to Greek service companies, beginning of 2012.	Greece (listed at ICAP's)	Structured questionnaire and applying exploratory	The dimensions of the ISO 9001 performance greatly contribute to the performance of the service companies and result in the product / services directly and significantly to ISO 9001. But financial performance is directly

			satisfaction focus				factor analyses	affected only by operational performance.
(Ishak, Aziah, & Manaf, 2013)	Measure the effect of the mediation of capital structure on the relationship between board of directors and company performance	ROE	Independent Directors, board's risk • CEO performance evaluation and leverage	Questionnaire survey of Malaysian directors and the companies' annual reports.	Questionnaire of 175 usable sample Annual report of 2007 to 2009.	Malaysia	Descriptive statistics and regression analysis	The effective independent directors and boards who monitor company risks vigorously are more likely to monitor management from adopting excessive leverage, which results in positive company performance.
(Ong & Chen, 2013)	Determining the impact of capabilities simultaneously on the company's performance	ROA, ROS, market value Market stock price to book stock price	Capabilities simultaneous	Collected from Information week and the Compustat database	top 500 it leaders in each of the past 23 years	Taiwan	Descriptive statistics and regression	It capabilities positively and significantly affect all three structures and that the level of importance of the company value is higher than the performance of the company and the future performance of the company.
(Hooi & Ngui, 2014)	Organizational learning (OL) capability as a mediator of the relationship between (HRM) and performance	Performance of companies	Human resource management mediated by Learning organizational (OL) capacity	Through a questionnaire	286 small and medium manufacturing companies	Malaysia	Structural equation modelling	The use of human-capital enhancing human resources practices the learning capacity of SMEs, and that the learning capacity of small and medium companies (SMEs) mediated the impact of HR practices on performance.
(Mehrabi, Hemmati, & Rahimian, 2014)	Verify the relationship between the intellectual capital of companies and their financial performance	Return on equity (ROE) Earnings per share (EPS) Return on asset (ROA)	IC Rate of growth IC of companies	Financial statements, companies and submitted financial reports	Only 146 publicly listed companies were selected	TSE	Empirical study and multiple regression analysis	Intellectual capital is positively related to the future performance of companies. The rate of growth of intellectual capital is also positively correlated with the performance of the company, and intellectual capital in companies in different sectors increases its future performance except for the food and drink group.
(Naveed, Nadeem, Ahmad, &	Identifying the impact of family ownership on the financial performance	Financial performance (ROE,ROA)	Ownership structure (family owned firms, non-	Karachi stock exchange	10 companies from Karachi stock exchange 100 index 2010	Pakistan	The simultaneous regression analysis	Positive and significant relationship between family ownership and the financial performance of companies, and improved overall corporate performance

Hamad, 2014)			family owned firms)					
(Khamis, Elali, & Hamdan, 2015)	Identifying the relationship between the classifications of ownership structures and the financial performance of companies	Tobin q ROA	Concentration ownership Foreign ownership Institutional ownership Managerial ownership	Bahrain stock exchange	Applied to 42 companies from all sectors listed on the Bahrain stock exchange during the period from 2007 to 2011.	Bahrain	Using multiple regression analysis	Conflict results with the effect of ownership structure on financial performance using the two measures. He also found that return on investment represents more financial performance than TQ.
(Riegermann & Damião, 2015)	Analyze the relationship between economic and financial performance measures and debt performance with the market value of companies	Market value	(ROI, RROI, ROE, ROS, EVA, AND MVA)	Financial information of companies compiled by the econometrical system	57 companies listed on the SAO PAULO securities market in Brazil from 2001 to 2012	Brazil	Panel data regression	Alternated in the performance measures in interpreting the market value of the companies, but the MVA is the main explanatory variable for the market value of Brazilian companies.
(Scholtz & Engelbrecht, 2015)	To measure the impact of the overall institutional ownership on the performance of the company	Tobin's q Return on Assets (ROA)	Percentage shareholding of international institutions, Domestic institutions, total Institutional shareholders, and Stability of shareholding	INET McGregor BFA database.	71 of the top 100 companies listed on the JSE for the 2009 to 2013	South African	Descriptive statistics and regression analysis	Institutional contribution is an important factor in corporate governance. The contribution of international institutions affects the future value of the company, but local institutions, total institutional ownership and stability of the overall institutional contribution affect the company's historical value.
(Islam, Habes, Karim, &	Verify the effects of ISO 9001: 2008 certification on Malaysian companies	Financial Performance	Quality performance HR mgt. Performance,	Questionnaire	600 (50 large, 550 small and medium companies)	Malaysia	Multivariate analysis	Companies accredited by ISO 9001 had a much greater financial performance than non-accredited companies, and no significant direct relationship was found

Omar, 2016)			Op. Mgt. Performance, Overall mgt. Performance					between the ISO 9001 certification and the company's financial performance.
(Mugobo, Mutize, & Aspeling, 2016)	Investigate the impact of corporate governance on the performance of the company	Company performance (ROA)	Corporate governance (structures, concentration, ownership, and government)	Listed on the Johannesburg stock exchange (JSE)	80 south African companies during the period 2001-2010	South African	Multiple regression analysis	Positive and important relationship between the concentration of ownership and government ownership with the company's performance and a negative relationship between insider ownership and firm performance, and concluded that managerial ownership is one factor that significantly weighs down company performance.
(Ngwenya, 2016)	Determining the relationship between CEO compensation, corporate governance and financial performance	ROE ROA	Predictors: CEOSB, LNTA, Debt ratio)	Annual reports of the listed platinum mines and McGregor BFA website	Listed platinum mines in south Africa using data for the period 2008 to 2013	South Africa	Descriptive statistics and regression analysis	There is no significant statistical relationship between the CEO'S compensation with roe and ROA. A positive relationship between the variables of governance (size of board of directors and number of non-executive independent directors), also found no statistic significant relationship between compensation of the CEO and the percentage of female board members.
(Mart et al., 2016)	Analyze whether the adoption of sustainable energy systems improves the financial performance of companies	ROA Tobin's q	Renewable energy sources, Energy efficiency, management efficiency	Asset 4 and world scope	574 companies from 36 countries during the period 2008-2013	Spain	Dynamic system panel data method	The adoption of sustainable energy systems allows companies to improve their financial performance in the short term and not leading them to reduce the financial performance in the long run.
(Ilna, Berezinets, & Cherkassaya, 2017)	Verify the relationship between the structure of the board of directors and	Tobin's q	Board size, board independence, gender diversity,	Extracted from the SKRIN database (www.skrin.ru)	207 Russian companies in emerging markets during the period from 2007 to 2011	Russia	A regression analysis	A positive relationship between Tobin's q and gender diversity of the board's. The analysis shows that smaller and larger boards are associated with value of Tobin's q.

	the performance of public companies		presence of board committees					
(Aluchna & Kaminski, 2017)	Verify the relationship between the structure of ownership and the financial performance of companies	ROA	First; second; CEO; state; industry; financial institutions; assets; debt	WSE obtained from IQ capital base	495 polish companies listed on the Warsaw stock exchange between 2005 to 2014	Poland	Panel data estimation	A negative relationship between the ownership concentration and the majority of shareholders with the return on assets, and its positive relationship between investor ownership and return on assets. It also found no statistically significant relationship between the ownership of the CEO and financial investors with performance.
(Kirsten & Dutoit, 2018)	Determine the relationship between performance-based remuneration for executives and the financial performance of companies	Total executive director remuneration (REM)	Return on equity (ROE), return on assets (ROA), earnings per share (EPS), sales figure / turnover (to) and price per share (PPS).	Johannesburg stock exchange in south Africa	42 companies in the area of consumer goods and services	South Africa	Pearson correlation and generalized least squares regression	The remuneration policies applied to south African executives in the consumer goods and services industry are affected by the share price of the company, and that the executive director remuneration is not directly related to the profitability or size of the company but directly related to maximizing shareholder wealth.
(Ionascu, 2018)	Investigate the relationship between gender diversity in the boards of directors and their performance.	ROA, market to book and Tobin's q	Diversity, Firm size, Board size, Listing age, Leverage, Assets in place	Bucharest stock exchange	All companies listed on the BSE in the last five years (2012–2016).	Romanian	The regression analysis	On average, diversity has no significant impact on the performance of companies. But, based on sub-sample analysis, the results show a strong correlation in the case of profit companies and those listed on the standard tier.
(Tomic, Tesic, Kuzmanovic, & Tomic, 2018)	Verify the relationship between employee loyalty, service quality, and reduce costs with the company's performance	Growth, Return on investment, Increased market share,	Employee loyalty, Service quality, and Cost reduction	Questionnaire	The sample of 100 service companies	Serbia	Statistic and path analysis	Employee loyalty is highly correlated and has a positive impact on the performance of the company, also the cost reduction and service provided have a positive relationship with the performance of the company.

		Increased profitability						
(Meyliana, Bunyamin, & Agustina, 2018)	To analyze the country's risk on the performance of the company	ROI ROE	Country risk	Annual financial statements from 2010 - 2015	ASIA regional stock exchange from 2010 until 2017	Indonesia	Simple linear regression	The study found that there is no relationship between the country's risk and the performance of the company, while the country's risks have a significant negative impact on the return on equity (ROE)
(Mishra & Kapil, 2018)	To explore the relationship between the characteristics of the board of directors and the performance	ROA Tobin q	Board characteristics	Prowess database of CENTRE for Monitoring of Indian economy (CMIE the five years from 2010 to 2014)	391 Indian companies listed on the national stock exchange	India	Panel data regression methodology	Tobin's q is more affected in the structure corporate governance of ROA, and there is a positive relationship between the size of the board and the performance of the company.
(Safaei Ghadikolaei, Khalili Esbouei, & Antucheviciene, 2014)	Present a fuzzy approach to assess performance by establishing a hierarchical assessment of financial performance using indicators	Financial performance evaluation	ROA, ROE, OPG, P/E, EVA, MVA, CVA, TVA, REVA, Tobin's q, CSV	TSE	Automotive companies of TSE in 2002-2011	Iran,	Analytical hierarchy (FAHP) and fuzzy complex proportional assessment	The accounting standards (OPG, ROE, and ROA) provide useful quantitative financial information on the performance of the company as well as economic valuation measures (EVA, CVA, MVA).
(Clemente, Taffarel, & Silva, 2012)	Assess the ability of accounting indicators to interpret short-term fluctuations in the prices of ordinary shares in Brazil	Daily closing price of common shares	Accounting-financial indicators taken from balance sheets and income statements	Econometrical software for investor support, and comprise quarterly financial statements	Sample of 24 companies in the SAO PAULO securities market (Bovespa)	Brazil	Quantitative approach in multivariate statistical analysis	That accounting indicators are important and have a significant impact on the interpretation of fluctuations in Brazilian public stock prices and confirm that accounting is an important source of information in the market.
(Serra, Trés, & Ferreira, 2016)	Aimed at measuring the impact of the chief executive on the	ROA	Ceos' experience	Questionnaire and social and demographic characteristics of	73 Brazilian companies, studied the characteristics of the executives	Brazilian	Cross sectional and pooled data by	Experienced executives will not be better than others in dynamic environments, as this experience has a negative impact on performance and has shown that formally

	performance of companies			The CEOs	they headed from 1997 to 2012		OLS regression techniques	educated executives are performing better in the short term.
(Moges Kasie & Moges belay, 2013)	Verify the relationship between the practice of measuring and improving the performance (MCPM)	Business Performance improvement	Finance, Customers & market, Community, Operation / process, Supplier, Employee Training & development	Questionnaire and interviews control of records, and analysis through financial and non-financial indicators	Using data from 33 selected industrial companies in Ethiopia, proposing a modified MCPM model to improve business performance	Ethiopia	Pearson's correlation coefficient	Positive relationship between the financial performance of the business and the multi-standard analysis, and clearly by analyzing correlation coefficient Pearson, since companies that measure their performance using important financial indicators (profit margin, ROA & ROCE, etc.) Perform better than others because the non-financial measures (labor-productivity performance) were not integrated with each other.
(Hornungová, Jana, Milichovský, 2016)	Determining the financial indicators that affect the performance of companies	Performance of companies	13 accounting indicators, classified as operational, profitability and return	Amadeus database	Group of agricultural companies in Czech	Czech	Correlation analysis and analysis of the various factors	The accounting indicators are important in evaluating the performance of companies and that the operational indicators have a strong relationship with performance, depending on the size of the company, which had a significant impact on the use of these indicators.
(Alam, Alam, & Khan, 2016)	Verifying financial performance through a set of accounting indicators	Firm performance	Roe, net asset /book value, Eps, Stock dividend, Price earning, Debt ratio	Annual reports and balance sheets of the company.	Saud Bahwan group	Oman	Empirical comparative analysis	No statistically significant correlation between the return of the Saud Shahwan group and five other companies selected for the study but their profitability is relatively better than their competitors.
(Rani, Yadav, & Jain, 2015)	Verify the impact of mergers and acquisitions on the performance of companies	Financial performance	14 accounting indicators related to profitability, efficiency, leverage, liquidity	Center for monitoring Indian economy (CMIE), the national stock exchange (NSE) web site and the	Acquiring companies involved in M & A during January 2003 to December 2008	India	Pont analysis	Accounting indicators used show an improvement in corporate performance and du Pont's analysis showed an improvement in the long-term operating profit margin of the companies.

				Bombay stock exchange (BSE)				
(Balatbat, Lin, & Carmichael, 2010)	Evaluate the performance of construction companies	Performance	Share prices, equity, valuation, and profitability ratios	Australian Securities exchange (ASX)	54 construction firms in the Sample. Listed under (GICS), for the period 1998-2007.	Australia	Fundamental analysis and comparison	That the performance of the sample companies can be compared to the largest shares traded on the Australian stock exchange, and also this study raises the interest and confidence of investors.
(Creixans-tenas & Arimany-serrat, 2018)	To know the economic and financial performance of companies	Return on assets (ROA)	solvency, debt, workload, and social responsibility, GDP, population and legal	SABI database	Hospital companies in Spain for the period from 2008 to 2015	Spain	Fundamental analysis and coefficient Pearson correlation	Companies are characterized by acceptable liquidity and indebtedness that significantly affect their profitability, and results showed good financial management of companies towards their performance, but it is necessary to improve the management of assets.
(Bruno & Carvalho, 2015)	To verify the impact of the dominant shareholder's assets on the performance of the company	P/B ROA	Family, government, Foreign and institutional	Brazilian securities & exchange commission (CVM).	Applied to 407 Brazilian companies from 2002 to 2009	Brazil	(OLS)	No statistical relationship between the origin of control by families and governments with the performance of the company
(li, yang, & Zou, 2016)	Assessing the credit risk of listed companies	Default probability	KMV model and ZPP models and compare their discriminatory power visually	Shanghai and Shenzhen stock exchanges	34 financial companies compared with 34 health companies during the period of 2005–2012	China	Zero-price probability (ZPP) and Kealhofer-McQuown-Vasicek (KMV)	The model (ZPP) is superior to the KMV model in terms of discriminatory power because the former works better in distinguishing between companies
(Hsu, Ou, & Ou, 2013)	Discuss and set standards and standards for evaluating the sustainable performance of companies	Sustainable development performance evaluation and ranking	22 financial ratios divided into operating ability, solvency and profitability	CSR reports database site of Taiwan's Gretai Securities Market (GTSM)	Selected 30 high-tech companies among these 97 companies in Taiwan as the research objects	Taiwan	Integrate grey relational analysis	Future business strategies will be used as an important reference for the investor and for bank credit audits

(Moss & Lux, 2014)	Test the hypothesis of valuation of European real estate securities	Market cap. Average value traded	Liquidity	European real estate stock market data	stock market data from the UK and Europe for 24 companies during the period from 2002 to 2012	UK	Models of depth and narrowness of the market	Main variable that characterizes the liquidity of these companies and their valuations is the market capitalization of Europe and UK companies. Since 2008 this is the reason for the increase in value added to cash
(Vig & Klopota, 2017)	Verify the relationship between the company's reputation and financial performance	The EVA, ROCE, ROA and ROE	Product, service, and company safety.	Survey of the paper was conducted in 2015 in Croatia	The reported unit was citizens from ages 18 to 65 to evaluate the reputation of 100 selected companies.	Croatia	Hierarchical regression methods in statistical analysis	Corporate reputation can be important indicators of financial performance and recommended attention to market value and ability to measure from time to time.
(Majid & Iode, 2015)	Impact of the decline in market capitalization less than the book value of the net assets in the companies	Decline in market capitalization less than the book value of the net assets	Accounting indicators to evaluate the companies	DataStream, and reporting in the financial statement	235 companies with financial year ended 2007. Second, subset of companies over a period of two years. This includes 258 companies for the financial years of 2006 to December 2007.	Malaysia	Panel data analysis for a set of accounting indicators to evaluate the companies	Goodwill may be impaired because it does not fully reflect the major cash-generating units of the companies to be disclosed in the financial statements. Nevertheless, the decline in market capitalization is still associated with the financial performance and results and represents an important beginning in the reporting of the decline in goodwill the study recommended requiring companies to issue an official statement related to goodwill to companies listed in emerging markets.
(Dermawan, 2017)	Verify the quality of earnings and market performance by reacting to market capitalization	Market capitalization	Operating profit Other comprehensive income	Annual financial statements (annual report)	50 companies with the largest market capitalization according to the fact book since the year 2010 to 2014	Indonesia	Regression analysis	A significant positive correlation between operating profit (OP) and market capitalization (MC), also there is no significant positive correlation between (OCI) and market capitalization (MC).
(Pawar, 2013)	Analyze the financial performance of the largest publicly traded telecommunications	Financial performance	Financial ratio	Telecommunications services provider (BSNL)	Largest publicly traded telecommunications services provider	India	Fundamental analysis	The liquidity position was strong and reflected the company's ability to pay short-term commitments on time.

	services provider (BSNL)				(BSNL) through the use of nine-year data (2010-2010)			
(Burja, 2011)	To present different models of the performance analysis of the company by determining the factors affecting the performance	ROA	Fixed assets, debt, leverage, sales to current assets, sales to equity, gross margin, return on inventory, Expenses, and revenue.	Annual financial statements	Financial statements of a company for the period between 1999 and 2009	Romania	Regression analysis	A strong relationship between the profitability of the company through the return on assets and the management of available resources.
(Aliabadi, Dorestani, & Balsara, 2013)	Examine financial and non-financial performance measures	stock return performance (market)	ROE, ROA, Oi/sales, Pti/sales, Ni/sales, Ib/sales	Drawn from the population of active Compustat global vantage database companies	302 companies with four years of observations from 2006 to 2009	U.S.	Regression analysis	Positive relationship between the market performance and the accounting performance measures. The most relevant accounting data is ROA
(Tsolas, 2013)	Evaluate the performance of a group of companies	Market capitalization (MC)	NFA; TE; TOC; SAE; TR; NIBT.	Reuters' database	19 construction companies listed on the Athens stock exchange	Greece	Data envelopment analysis (DEA) and regression models	No positive relationships between the efficiency of profitability and the performance of companies in the market. Profitability can also be explained by selling, administrative cost ratio, total revenue and profit margin
(Lenka, 2017)	The impact of leverage on profitability of companies	(ROE)	Debt ratio	The commercial database Magnus web which covers all economic subjects in the Czech republic	14 commercial sectors	Czech	Linear regression model	Leverage (debt ratio) has a significant negative impact on the performance of companies, and a negative relationship between the profitability of the company with the use of debt in the majority of business sectors.
(Mihai, 2013)	Investigate the impact of corporate governance on firm performance	ROE, ROA and ROS.	Board size, board independence,	Annual reports or from company websites	15 non-financial companies	Romanian	Multiple linear regression analysis	An important relationship between corporate governance and company performance through ROA and ROE, and a strong positive correlation between

			and CEO duality					the performance of the company and its independent members.
(Vasiu, 2016)	Analyzing the relationship between the main performance indicators	Bet index	ROA, ROE, and EPS.	Bet index	Bet index for the participating companies in the period 2011-2015.	Romania	Analysis of correlation	A strong correlation between (EPS) and (BET) index, and a low correlation between (ROA) and (ROE) with (BET) index.
(ng, Wong, & Zhang, 2011)	To develop a quantitative model based on financial indicators	Z-score model to distinguish insolvent companies	Solvency, Profit, Operation, Cash flow, and Scale of firms	Annual reports or from company	35 construction contractors	China	22 financial ratios and the z-score model	The operating indexes have the highest discriminatory capacity (current asset turnover and working capital to total assets), and profit indicators (gross return on profit and return on assets) are also necessary for long-term solvency.
(Sajjan, 2016)	Estimate the probability of corporate bankruptcy	Bankruptcy (z)	Ratios	Secondary source & annual reports.	6 companies listed in Indian stock exchanges for past 5 years i.e. From 2011 to 2015	India	Altman's z-score model	There are three companies that are prone to bankruptcy because of their poor financial performance. Other companies have also been discriminated, some of them achieved profits in 2012.
(Tyagi, 2014)	Measure the financial performance and know the efficiency of companies financial operations	Discriminate function score of a firm	Ratios	online sources for a period of 07 years	Applied to a group of logistics industry companies in India for 7 years during the study period (2005-06 to 2011-12)	India	Altman's z-score model based on multiple discriminate analysis (MDA)	The sample of the study was in a healthy range, were the average value of all selected companies was between 1.82 and 3.39 during the study period (2005-06 to 2011-12). It also found that the overall performance of the logistics industry in the Indian was good.
(Azar & Nasr, 2016)	To verify the ability of financial ratios to predict the financial state of companies	Altman z-scores model (bankrupt, non-bankrupt)	Financial ratios	The financial statements of SMEs	222 small and medium companies in 2011 and 2012 in Lebanon.	Lebanon	Using the Altman z-scores model	That Altman z-scores are able to predict well the solvency of SMEs having well-performing loans, but are unable to accurately predict the bankruptcy of SMEs having non-performing loans.
(Odibi, Basit, & Hassan, 2015)	Examine the reliability and relationship of the z-score Altman model	financially distressed companies and non-financially	Financial ratios	Financial statements	34 public manufacturing companies listed on bursa Malaysia during the period 2010-2014.	Malaysia	Multiple discriminant analysis	Not all failed companies were included in the list pn-17 and that four out of five financial ratios are significantly correlated with predicting corporate failure through the Altman' z-score model.

		distressed companies)						
(Venkatar amana, Azash, & Ramakris hnaiah, 2012)	Know the financial performance and predict the risk of corporate bankruptcy	Altman z-scores model for bankruptcy and risk	Financial ratios	Annual financial reports of the selected cement	Cement companies in India from 2001-2010	India	Altman z-score analysis	Liquidity, working capital and solvency of companies are not satisfactory, and some companies suffer from poor financial performance and approach the level of bankruptcy.
(Muchlis & Jayanti, 2009)	Identify bankrupt and non-bankrupt companies	Altman z-scores model for bankruptcy and financial risk	Financial ratios	Indonesian Capital market directory, JSX annual report	39 property companies listed in IDX, but only 19 companies of 39 registered from 2004 to 2008	Indonesia	Altman z-score analysis	Two of the companies are fit into healthy company's category and one was in a fit into bankrupt company.
(Halteh, Kumar, Gepp, & Gepp, 2017)	Predict the financial crisis of Islamic banks using utilizing cutting-edge stochastic models	Altman z-scores	Eighteen accounting indicators	Annual financial reports of the selected cement	Data for the year 2014 using a data set of 101 Islamic banks that operate on a global scale	Australia	Altman z-score analysis	"Working capital / total assets" ratio is the most important variable for predicting financial distress. Using the standardized profits method, the "return on revenue" ratio was found to be the most important variable.
(Foo & Pathak, 2016)	Measuring the relationship between financial health and company performance	Return on equity (ROE)	Altman z-score	Thomson Reuters DataStream database	Manufacturing companies listed in two financial markets (China, India) between 2000 and 2013	Singapore	Linear regression	A statistically significant positive correlation between ROE and z-score for both markets, also showed that China is the healthiest.

(2) Companies' Sample Categories

#	Company Code	Company Name	Sector
1	ARBK	Arab Bank	Banks
2	THBK	The Housing Bank Trade & Finance	Banks
3	EXFB	Capital Bank Of Jordan	Banks
4	BOJX	Bank Of Jordan	Banks
5	AHLI	Jordan Ahli Bank	Banks
6	CABK	Cairo Amman Bank	Banks
7	JOIB	Jordan Islamic Bank	Banks
8	UBSI	Bank Al-Etihad	Banks
9	JCBK	Jordan Commercial Bank	Banks
10	ABCO	Arab Banking Corporation Jordan PSC	Banks
11	INVB	Invest Bank	Banks
12	JOKB	Jordan Kuwait Bank	Banks
13	JJIC	Jordan International Insurance	Insurance
14	TIIC	The Islamic Insurance	insurance
15	FRST	First Jordan Investment Company PLC	Financial Services
16	UINV	Union Investment Corporation	Financial Services
17	FUTR	Future Arab Investment Company	Financial Services
18	SANA	Al-Sanabel International	Financial Services
19	JEIH	Jordanian Expatriates Invest HLD	Financial Services
20	AMAL	Al-Amal Financial Investments Corporation	Financial Services
21	AAFI	Al-Amin for Investment	Financial Services
22	UCFI	United Financial Investments	Financial Services
23	SABK	Sabaek For Investments PSC	Financial Services
24	ULDC	Union Land Development Corporation	Real Estates
25	JRCD	Jordanian Real-estate Company	Real Estates
26	IDMC	Ad-Dulayl Industrial Park & RE CO PLC	Real Estates
27	EMAR	Emmar Investments & Re Development	Real Estates
28	ATTA	Comprehensive Land Development	Real Estates
29	COHO	Contempro For Housing Projects	Real Estates
30	AQAR	The Real Estate & Investment Portfolio	Real Estates
31	JNTH	Al-Tajamouat for Catering & Housing	Real Estates
32	PHNX	Taameer Jordan Holdings Public Shareholding	Real Estates
33	REDV	Real Estate Development	Real Estates
34	DADI	Dar Al Dawa Development Investment	Industrial
35	MBED	The Arab Pesticides Manufacture Corporation	Industrial
36	UMIC	Universal Mod Investment	Industrial
37	EICO	Al-Eqbal Investment Company LTD	Industrial
38	APOT	The Arab Potash	Industrial
39	JOPH	Jordan Phosphate Mines	Industrial
40	JOCM	The Jordan Cement Factories	Industrial
41	JOST	Jordan Steel	Industrial

‘Companies’ Sample, continued’

#	Company Code	Company Name	Sector
42	AALU	Arab Aluminum Industry Aral	Industrial
43	ASPM	Arabian Steel Pipes Manufacturing	Industrial
44	UCIC	United Cable Industries	Industrial
45	WIRE	National Cable & Wire Manufacturing	Industrial
46	JOWM	The Jordan Worsted Mills	Industrial
47	CEIG	Century Investment	Industrial
48	ABMS	Al-Bilad Medical Services	Services
49	AIEI	Arab International Education & Investment	Services
50	ZEIC	Zarqa Educ	Services
51	MALL	Al-Dawliyah for Hotels & Malls	Services
52	MSFT	Masafat For Specialised Transport	Services
53	SHIP	Jordan National Shipping Lines	Services
54	JETT	Jordan Express Tourist Transport	Services
55	JTEL	Jordan Telecom	Services
56	JOPT	Jordan Petroleum Refinery	Services
57	JOEP	Jordan Electric Power	Services
58	OFTC	Offtec Holding Group PLC	Services
59	ATCO	Enjaz For Development & Multi Projects	Services
60	MANE	Afaq For Energy Corporation PLC	Services
61	NAQL	Transport & Investment Barter Company	Services
62	RICS	Al-Rakaez Investment Corporation	Services
63	SITT	Salam International Transport & Trading	Services

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