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Research Article

The Effect of CEO Overconfidence and CEO Narcissism on the Relationship between Social Responsibility and Financial Performance in the Listed Companies in Tehran Stock Exchange

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Abstract

The present study aimed to investigate CEO overconfidence and narcissism on the relationship between social responsibility and financial performance in companies listed on the Tehran Stock Exchange. This research was applied in purpose and was descriptive-correlational in its method. This research's statistical population included all the firms listed in the Tehran Stock Exchange, 147 companies operating in various industries from 2011 to 2016. The hypothesis testing method was performed by the regular regression method using Eviews software. The results showed that there was a positive and significant relationship between social responsibility and financial performance. Furthermore, overconfidence had no significant effect on the relationship between social responsibility and financial performance. Finally, CEO narcissism did not significantly affect the relationship between social responsibility and financial performance.

Keywords: CEO Overconfidence, CEO Narcissism, Social Responsibility, Financial Performance, Tehran Stock Exchange.

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1. Introduction

The growing demand for corporates beneficiaries for social responsibility has encouraged companies to engage in environmental and social responsibilities. The social responsibility of the organization means that the alliance and solidarity of organizations' activities and values are in such a way that the interests of all the beneficiaries, including stakeholders, customers, investors, and the general public, will be reflected on policy and organizational performance (Maran Jouri and Ali Khani, 2014). Policies and activities related to social responsibilities can reduce corporate risk (Heal, 2005; Goss and Roberts, 2011). Reducing corporate risk and risk immunity can be decreased by reducing the conflict between the company and community; therefore, social responsibility activities reduce such conflicts. Social responsibility activities are beneficial to stakeholder values (Jiao, 2010). Many developing countries do not have any specific laws and regulations to force companies to observe environmental issues and employee and community rights. In practice, they cannot prevent these companies from harming the environment. In such a situation, the main driver of controlling social responsibility is the conciseness of these companies and the attitude and spirit of their managers (Adams, 2002). On the other hand, fundraising and increasing the owners' wealth in the long-term can be considered one of the enterprises' main goals. Stakeholders, creditors, and other business-related groups need reliable and relevant information about their financial performance to make logical decisions. Since the stakeholders and creditors allocate their limited financial resources to firms, evaluating firms' performance is critical for allocating the limited resources. Evaluating the company's performance and assessing its financial performance is considered a task of management control, and its timely performance can help to an optimal allocation of its limited resources (Vakilifard and Feizabadi, 2015). In addition, prior studies about the managers' overconfidence have emphasized these managers' results and achievements. Compared with other companies, a company with overconfident CEOs is more likely to overlook social responsibility because they feel they are above and beyond the law. It is expected that in companies with overconfident CEOs, the value of social responsibility will be less clear. While managers overconfident and narcissistic take less risk, it seems that companies with overconfident managers pay less attention to social responsibility (McCarthy et al., 2017). On the other hand, overconfidence and narcissism personality traits can be exacerbated and confirmed by financial pressure and the praise from other managers involved in these decisions (Hayward et al., 2004). Narcissistic managers often seek to exaggerate themselves and frequently take bold and aggressive actions concerning their perspective and leadership, and it is more obvious in times of turmoil and crisis (Frino et al., 2015). Studies show that narcissistic managers are more inclined to do these items: a. demonstrate their annual report; b. appear more in the media; c. attribute the positive traits to themselves; d. deserve themselves for more rewards (Chatterjee and Hambrick, 2007). in explaining this research's motivation, it can be mentioned that since many companies listed on the Tehran stock exchange are involved in social responsibility activities and are legally required to disclose their social responsibility data. On the other hand, due to the wide variety of available in these companies (including geographical area, company size, and dimensions, management structure, etc.), the characteristics of managers of these companies can have a different impact on the level of their social responsibility activities and financial performance. (Akbari et al., 2015), The study of CEO overconfidence and CEO narcissism on social responsibility activities and their performance can be a fundamental issue. The importance of research is that it is expected that in companies with CEO overconfidence, the value created by social responsibility is less clear (McCarthy et al., 2017). Therefore, CEO overconfidence and CEO narcissism are expected to moderate the relationship between corporate social responsibility and

financial performance. On the other hand, based on the theoretical foundations of research and studies, it is expected that social responsibility improves the financial performance of the company and increases the company's profitability.Therefore, concerning the mentioned explanations, no empirical research has been conducted to investigate CEO overconfidence and narcissism on the relationship between social responsibility and financial performance; thus, the present study is innovative in this regard. Finally, this research seeks to answer whether there is a significant relationship between social responsibility and financial performance and does the CEO overconfidence and narcissism have a significant impact on the relationship between social responsibility and financial performance?

This paper's structure is as follows: Section 2 presents the theory and literature, research background, and hypotheses. In Section 3, methodology, including data gathering methods, variables, and the regression model, are explained. In Section 4, empirical results are presented, and Section 5 is a conclusion and suggestions.

2. Literature review

2.1. Social responsibility

Corporate social responsibility is perceived as the commitment of an individual or organization to society (which includes people like a physical environment) when the outcomes of its activities do not just affect themselves. Corporate social responsibility has been considered for a long time by academics, researchers, NGOs, and the government as one of the dimensions of corporate operating activities. Increasing the globalization of business, increasing the strategic importance of beneficiary relationships, and growing corporate impression management are three key factors and provocative in enhancing the importance of corporate social responsibility (Azim et al., 2009). Social responsibility is a bridge between the business unit and the stakeholders and attracts institutional investors. Institutional investors about the ownership of a significant portion of corporate stock have significant influence over investee companies. They can influence managerial procedures and, by providing accurate information from companies, consider professional ethics. Thus, the internal functioning of social responsibility and institutional ownership can lead to the improvement of corporate status, and finally, enhancement of return and profitability and then long-term corporate survival.

2.2. Financial performance

In the past, organizations could calculate their productions' value and size by traditional accounting methods. Today, these methods are not useful anymore. Financial issues' importance as the heart of any organization should have high accuracy and safety, and its importance is growing in recent years. Inappropriate financial and accounting procedures and unconsidered regulations, such as the patient's heart failure, make the organization's structure sick and unstable. Economic growth, increasing joint-stock companies, and separation of management from ownership have made the agency issues one of the most important investors' concerns. On agency relations, the owners' purpose is to maximize wealth, so they monitor the agent's performance and evaluate their financial performance (Jiang and Li, 2008). Measuring the financial performance of companies for creating a conflict of interest between owners and managers is one of the major issues in the financial filed that failing to do it may result in a lack of optimal allocation of resources and may result in losses of the owners and overall macroeconomic environment (Ebrahimi Kordler, 2007). On the other hand, in this era of increasing globalization, competitiveness is considered an important issue among policymakers of different levels (country, industry, and company) in different parts of the world.

2.3. Overconfidence

Overconfidence is a personality trait that can be defined as being biased (deviancy) and having unrealistic beliefs (positive) about any aspect of an event under uncertainty (Skala, 2008). Many overconfident managers are very optimistic about their decisions and their results, especially in investment decisions (Cooper et al., 1988). Due to over-optimism, these managers may mispredict the project cash flows as a desirable outcome and, therefore, value many projects above their real value. On the other hand, they believe that the market value underestimates their company valuation and makes external financing costly. For this reason, if the company has internal resources, overconfident managers may be more inclined to over-invest. Still, if the project financing requires external resources, it may result in underinvesting (Malmendier and Tate, 2005).

2.4. CEO narcissism

In general psychology, clinical psychology, and psychiatry, narcissism is defined as a personality disorder in which narcissism is an inflexible and constant feature that includes exaggeration, arrogance, and a need for admiration (Rijsenbilt and Commandeur, 2013). Narcissism is defined as relatively stable individual differences that include exaggeration, self-love, self-conceit, and grandiosity (Campbell et al., 2011). Narcissistic leaders often seek to exaggerate and take bold and aggressive actions about their perspective and leadership. It is more obvious in times of turmoil and crisis that narcissistic leaders can defend with more confidence, and their relative success is more than cowards (Frino et al., 2015). One of the positive characteristics of narcissistic leaders is that they are a source of creativity and support for innovative ideas.

2.5. Study background

To describe the logic of research hypotheses, it can be noted that overconfident managers tend to exaggerate their abilities and performance (Tomak, 2013). In other words, managers' high trust has the effect of showing the probability of good results in a high way that minimizes the probability of bad results of their activities. In other words, overconfidence causes managers to exaggerate the possibility of favorable conditions occurring and ignore the risks of their projects and increase the likelihood of the company going bankrupt through irrational actions; And in this way, they affect the company's financial performance. Based on this, it can be argued that these managers pay less attention to social responsibility (McCarthy et al., 2017).

Several pieces of research show that narcissists' skills are useful for leading them in a group. At the same time, other research has shown that narcissism has a wide range of effects on leadership, including negative effects on organizational effectiveness, unpredictable organizational performance at the extreme, and an alternative relationship between success and ethics. Social responsibility activities, on the other hand, cover a wide range. Companies may produce products made from environmentally friendly materials (working exclusively with community organizations or charities). This means that social responsibility activities can impact the company and, more broadly, society. Previous research (1970) has shown that social responsibility is negative for stakeholders; However, recent research (2010) has evaluated it positively. Some researchers have identified narcissism and overconfidence as a risk factor for aggressive behavior (Bushman and Bamister, 1998). Narcissism can affect managers' judgment of the probability of different outcomes. In Nietzsche's words, these managers see themselves as "top managers" to whom ordinary rules do not apply (Norberg, 2009). This belief can increase the likelihood of engaging in unethical activities such as profit management, improper financial reporting, and disregard for social responsibility and justify their activities (Chen, 2010). They lead to the implementation of bold strategic, operational

measures and risky businesses (Chatterjee and Hambrick, 2007; Olsen and Stockelberg, 2016) so that these decisions lead to great profit or loss in the end. It will be the fiscal year (Petrenko et al., 2015).

Awaysheh et al. (2020) find that the significant relation between operating performance and CSR categories disappears, calling into question whether this relation is causal. Szegedi et al. (2020) find that the results indicate an increase in all banks' overall CSR disclosure in the sample. The findings suggest the involvement of commercial banks in CSR activities. Its proper disclosure has helped improve their accounting-based financial performance proxied by the return on equity (ROE) and return on assets (ROA). Cho et al. (2019) showed that CSR performance has a partially positive correlation with profitability and firm value. Park et al. (2019) showed that CSR activities undertaken due to CEO overconfidence by financially unconstrained firms could be harmful to shareholder value in the long term. Cho et al. (2019) showed a positive and significant relationship between social responsibility and corporate financial performance.

Stefanie and Han (2018) concluded that overconfidence has a weak positive effect on financial performance. Yi Tang et al. (2018) concluded that there is a strong (weak) positive relationship between CEO narcissism and social responsibility when the corporate board in the field of social responsibility invests more (less) than the CEO. In addition, there is a very strong negative relationship between CEO haughtiness and social responsibility when the companies are less committed to social responsibility than the CEO. Kum et al. (2017) concluded that units with high social responsibility levels are better in working capital and financial ratios. Khajawi et al. (2018) showed a direct and significant relationship between managers' narcissism and social responsibility and financial performance. Furthermore, the results also showed a significant direct relationship between social responsibility and financial performance. The moderating role of managers' narcissism in the relationship between social responsibility and financial performance was confirmed. Akbari et al. (2015) indicated that management overconfidence had a negative impact on social responsibility throughout the study. Khajawi et al. (2016) showed a direct and significant relationship between narcissism, earnings management, and financial performance. Amiri et al. (2013) found a significant relationship between social responsibility and corporate performance. Finally, according to the mentioned theoretical and research foundations, the research hypotheses are as follows:

Hypothesis 1: There is a significant relationship between social responsibility and financial performance.

Hypothesis 2: CEO overconfidence has a significant impact on the relationship between social responsibility and financial performance.

Hypothesis 3: CEO narcissism has a significant impact on the relationship between social responsibility and financial performance.

3. Research methodology

This research is applied in purpose, and its method is descriptive- survey research. A library method was used to collect data and information. The theoretical (bases) foundations were collected using books, magazines, and specialized Persian and Latin websites. The required financial data were collected using the Rahavard Novin software and the Codal site. This research's statistical population is all the listed companies in the Tehran Stock Exchange from all industries during 2011-2016. The statistical sample was as an elimination (systematic) sampling in which the selected companies about the following limitations are from the listed companies on the Tehran Stock Exchange and

have the following criteria:

The financial year for each company ends on March 29th.

They should not be part of banks and financial institutions, investment companies, financial intermediaries, holding and leasing since the disclosure of financial information and corporate governance structures are different.

The f companies stocks have been traded on the Tehran Stock Exchange, and a trading halt has not been for more than three months.

The required financial information for the extraction of the research required data should be available.

About the mentioned conditions, 147 companies represented the actual statistical population of the study. Therefore, using the regular multiple regression statistical method, the previous section's mentioned research hypotheses were investigated. Furthermore, the research hypothesis was tested using Eviews software, and a description of the statistical hypothesis testing scheme is presented in the following sections.

$$\mathrm{PER}_{i,t} = \alpha_0 + \alpha_1\,\mathrm{CSR}_{i,t} + \alpha_2\,\mathrm{cashflow}_{i,t} + \alpha_3\,\mathrm{Lev}_{i,t} + \alpha_4\,\mathrm{Size}_{i,t} + \alpha_5\,\mathrm{ROA}_{i,t} + \alpha_6\,Gender_{i,t} + \alpha_7\,\mathrm{mansh}_{i,t} + \alpha_8\,\mathrm{INB}_{i,t} + \alpha_9\,\mathrm{TOP1}_{i,t} + \alpha_{10}\,\mathrm{lnssh}_{i,t} + \alpha_{11}\,\mathrm{group}_{i,t} + \alpha_{12}\,CAPEX_{i,t} + \varepsilon_{i,t}$$

The following regression models were used to test the research hypothesis:

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(First hypothesis regression model)

$$\mathrm{PER}_{i,t} = \alpha_0 + \alpha_1\,\mathrm{CSR}_{i,t} + \alpha_2\,\mathrm{overconfidence}_{i,t} + \alpha_3\,\mathrm{CSR}_{i,t} * \mathrm{overconfidence}_{i,t} + \alpha_4\,\mathrm{cashflow}_{i,t} + \alpha_5\,\mathrm{Lev}_{i,t} + \alpha_6\,\mathrm{Size}_{i,t} + \alpha_7\,\mathrm{ROA}_{i,t} + \alpha_8\,Gender_{i,t} + \alpha_9\,\mathrm{mansh}_{i,t} + \alpha_{10}\,\mathrm{INB}_{i,t} + \alpha_{11}\,\mathrm{TOP1}_{i,t} + \alpha_{12}\,\mathrm{lnssh}_{i,t} + \alpha_{13}\,\mathrm{group}_{i,t} + \alpha_{14}\,CAPEX_{i,t} + \varepsilon_{i,t}$$

(Second hypothesis regression model)

$$\mathrm{PER}_{i,t} = \alpha_0 + \alpha_1\,\mathrm{CSR}_{i,t} + \alpha_2\,\mathrm{narcissism}_{i,t} + \alpha_3\,\mathrm{CSR}_{i,t} * \mathrm{narcissism}_{i,t} + \alpha_4\,\mathrm{cashflow}_{i,t} + \alpha_5\,\mathrm{Lev}_{i,t} + \alpha_6\,\mathrm{Size}_{i,t} + \alpha_7\,\mathrm{ROA}_{i,t} + \alpha_8\,Gender_{i,t} + \alpha_9\,\mathrm{mansh}_{i,t} + \alpha_{10}\,\mathrm{INB}_{i,t} + \alpha_{11}\,\mathrm{TOP1}_{i,t} + \alpha_{12}\,\mathrm{lnssh}_{i,t} + \alpha_{13}\,\mathrm{group}_{i,t} + \alpha_{14}\,CAPEX_{i,t} + \varepsilon_{i,t}$$

(Third hypothesis regression model)

3.1. Research variables

Based on this study's presented principles, the variables are expressed in four independent, dependent, moderator, and control groups, which are presented below.

3.1.1. Independent variable

3.1.1.1. Social responsibility (CSRi,t)

Corporate Social Responsibility (CSR) is an independent component of this research. In the present study, to measure the disclosure of corporations' environmental and social information levels, a preliminary checklist of 43 types of information was compiled after

studying the related literature that these data were adapted from Aribi and Gao (2010) and Gao et al., (2005) research. After excluding some of the items, a final checklist containing 39 types of environmental and social information was prepared, which is expected to be disclosed voluntarily or compulsively in the annual corporate report. After preparing the checklist, the coding rules were defined. Each sub-sections of disclosure was clearly and operationally defined to precisely identify which sentence belongs to what part. The total number of disclosed sentences in each disclosure segment's sub-sections reflects the level of company environmental and social information disclosure. The environmental and social information disclosure checklist is shown in table 1.

Table 1. Environmental and social information disclosure checklist

Disclosure items	Subsection
Environmental issues	Pollution control, Environmental damage prevention, Recycling or prevention of waste, Natural resources conservation, Research and development, Environmental policy, Investment in environmental projects, Other environmental issues
Products and Services	Product safety and health, Stop producing a product, Other, ISO/product development/ Market share, Product quality, Products and services
Human Resources	Number of employees, Monthly salary/ cash benefits and rewards, Employee share ownership, Retirement, termination benefits, Health and safety at work, employee training and development programs, Sports and welfare, Employee loan or insurance, Employee morale and communication, Other human resources
Customers	Customer health, Customer complaints/ satisfaction, Overdue payment policy for specific customers, Provision of after-sales facilities and services, Response to customer needs, Other customers
Community Responsibilities	Social investment, support for community activities, Charity services and gifts, Legal actions, Lawsuit (litigation), Religious/ Cultural activities, Other community responsibilities
Energy	Energy conservation and saving, Development and exploration of new resources, Using new resources, Other energy

3.1.2. Dependent variable

3.1.2.1. Financial performance (PERi,t)

In this research, the financial performance of the company is a dependent variable. To measure this variable, we use Tobin's Q Ratio. This ratio plays a vital role in financial transactions, especially investment opportunities. It is defined as the firm's ratio of market value to the cost of replacing its assets. That is, the company's assets must be capable of replacing the company's market value. Therefore, if the company's value is more than its assets' book value, the company can use its assets optimally. In contrast, a Tobin Q value of less than 1 shows that the company's financial performance is not performing well. This criterion is calculated by the following equation (1):

$$\text{Tobin`s Q} = \frac{\text{MVS+BVD}}{\text{BVA}} \qquad \text{(Equation 1)}$$

Where:
MVS: Market Value of Common Stock
BVD: Debt Book Value
BVA: Book Value of Assets

3.1.3. Moderator variable

3.1.3.1. Overconfidence (overconfidence i,t)

Regarding Scherand and Zechman's (2012) research, the overinvit criterion related to investment has been used to measure management overconfidence.

Overinvit: Based on the research by Scherand and Zechman (2012), this is the concept of investment surplus, which is obtained from the regression of asset growth to the industry-level sales growth as described in relation (2). If this relationship's residue remains positive, it means that the company is overinvested, and number 1 is considered for it; otherwise, it is zero.

$$\Delta \text{ASSETS}_t = \alpha_0 + \alpha_1\, \Delta \text{SALES}_t + \varepsilon_{\text{I,t}} \qquad \text{(Equation 2)}$$

In this model, ΔASSETS shows the change in the current year's total assets compared to the previous year, and ΔSALES represents the change in total sales revenue of the current year compared to the previous year.

3.1.3.2. Narcissism (narcissism i,t)

In this research, CEO overconfidence is measured by the size of his signature. A frame is drawn around his signature and then analyzed using Image software, and its area is measured. Then it is analyzed that if the size area of the CEO's signature is larger than the median of the CEOS' signature of the sample firms, it means that the CEO is narcissistic and takes the number one. If the related area is smaller than the median, this means that the CEO is not narcissistic and takes the number zero.

3.1.3.3. Control variables

(SIZEi,t): The company's size is calculated from the natural logarithm of the company's total assets. Previous studies have shown that larger companies are less subjected to financial distress due to greater diversity. However, smaller companies have higher external financing costs and therefore have more constraints than larger firms.

(ROAi,t): It is the return of the company's assets in the study year and is equal to the net profit to the book value of the company's assets.

($cashflow_{\text{it}}$): The net ratio of cash flows from operating activities during the financial year to the total assets at the end of the year.

(LEVi,t): The financial leverage is calculated by dividing total debt by the total assets.

(GENDERi,t): It is the gender of the CEO, and if the CEO is male, the number is one, and if it is female, it is zero.

(TOP1i,t): It is the stock of the largest stakeholder and is measured as the proportion of the stock that is held by the major stakeholder.

(Manshi,t): It is the stock of the board of directors and is measured as the proportion of shares held by the board of directors.

(Insshi,t): It is the shares of institutional stakeholders and is measured as the proportion of institutional stakeholders' ownership. In other words, it is the percentage of stock held by banks, insurance, pension fund, and investment companies.

(INBi,t): It is a non-performing dormant member of directors. It is measured as the ratio of a non-performing dormant member of directors obtained by dividing the number of non-performing dormant members by the total number of members.

(groupi,t): It is the group of companies, and if the target company is the main company of the group, the number is one; otherwise, it is coded as zero.

(CAPEXi,t): The capital cost of a company is the amount of cash used to buy or retain a company's physical assets. When these costs are high, more active investment activities that can lead to higher future profits are expected. The capital cost of the company is

calculated as a weighted average;

$$WACC = W_d \, . K_d(1-T) + W_s . K_s \quad \text{(Equation 3)}$$

Where:

W_dThe market value of long-term debt is considered equal to the book value of long-term debt.

K_d: It is the expected cost of long-term debt that is equal to the interest rate.

T: Final income tax rate (enacted marginal tax rate) (in this research, the fixed rate is assumed to be 22.4%).

W_s: The common stock market value.

K_s: It is the expected cost of common stock that is equal to the expected return on common stock.

ε: The remainder of the model.

4. Results

In this part, descriptive and inferential statistics will be discussed.

4.1. Descriptive statistics

In the descriptive statistics section, data analysis was performed using central indicators such as mean and dispersion index and minimum and maximum. The descriptive statistics of the research are as follows:

Table 2. Variables descriptive statistics

Variables	Mean	Median	Maximum	Minimum	Standard Deviation
Dependent variables					
Cash flows	0.127	0.113	0.444	-0.127	0.122
Capital cost	0.143	0.060	0.879	-0.170	0.263
Social responsibility	0.419	0.410	0.667	0.154	0.114
Non-executive members	0.661	0.600	1.000	0.200	0.183
Institutional shareholders	0.392	0.308	0.969	0.000	0.271
Leverage	0.604	0.610	1.131	0.170	0.212
Board of directors stock	0.638	0.710	0.976	0.000	0.271
Performance	1.651	1.454	3.806	0.831	0.670
Return on asset	0.113	0.099	0.455	-0.213	0.136
Company size	14.219	13.96	18.141	11.419	1.494
The stocks of the largest shareholder	0.493	0.509	0.914	0.107	0.205
Artificial variables					
Variables		Number 1	Number 0		
Gender		873	4		
Group		640	207		
Narcissism		432	445		
Overconfidence		345	532		

The main central index is the mean, which indicates the equilibrium point and the center of gravity of the distribution and is a good index to show the centrality of the data and the standard deviation. It is one of the most important parameters of the dispersion and is a criterion for dispersing the observations to the mean. Now concerning the results of Table 2, the mean of the social responsibility variable is equal to 0.419, which indicates that most of the data is focused around this point, and its standard deviation is equal to 0.114. In other words, the standard deviation indicates that the average dispersion of social responsibility values around the mean is 0.114.

4.2. Inferential statistics

4.2.1. Chow test (F Limer)

The Chow test results are presented in Table 3 to select the appropriate model for estimating the research models.

Table 3. Chow and Hausman test results

Hypothesis	Test name	x^2 statistics	Significance level	Result
First	Chow	739.840	0.000	Panel precedence
	Hausman	136.598	0.000	Fixed effects precedence
Second	Chow	731.391	0.000	Panel precedence
	Hausman	155.402	0.000	Fixed effects precedence
Third	Chow	749.632	0.000	Panel precedence
	Hausman	138.989	0.000	Fixed effects precedence

As shown in Table 3, and since the Chow test's significance level is less than 0.05, the panel estimation model is preferable to the hybrid model estimation. Furthermore, according to the Hausman test, its significance level is less than 0.05. Fixed effects are preferable over random effects. Consequently, the panel method with fixed effects is used to estimate this model.

4.3. Analysis of the results of the first research model

According to Table 4, it can be seen that the F statistic is 10.338 and its significance level is less than 0.05. As a result, the whole regression model is accepted; it means a significant relationship between independent and dependent variables. At least one independent variable has a significant relationship with the dependent variable. The results of the first research regression model are summarized in Table (4).

According to the results of Table 4, from the estimation of the research pattern and concerning the F statistic (10.338), the probability level is equal to (0.000). Less than 0.04, as a result, at the confidence level of 95%, it can be said that the overall pattern of research is well-fitted and is highly significant. The social responsibility variable coefficient is positive and equal to 0.688, and its t-statistic is 6.312. Since the absolute value of t statistic is greater than 2, and its significance level is less than 0.05, it can be said that there is a positive and significant relationship between social responsibility and firm performance. There is a positive and significant relationship between social responsibility and firm performance; therefore, the research's first hypothesis is confirmed. Besides, according to the adjusted coefficient of determination of the model, which is 0.62, it can be stated that the independent variables can explain more than 62% of corporate financial performance. Furthermore, concerning the value of the Durbin-Watson statistic, which is 1.551, and since it is in the range of 1.5 to 2.5, it can be said that there is no serial autocorrelation between the residuals of the research pattern. In addition, since the variance increasing factor (VIF) for all independent variables is less than 55, it is confirmed that there is no collinearity between the independent variables. In the following, the results of the research hypotheses are discussed.

Table 4. The results of the first research model estimation

Variables	Symbol	Coefficient	Standard deviation	t-statistic	Significance	VIF
y-intercept	β0	-2.272	0.739	-3.074	0.002	
Social responsibility	CSR	0.688	0.109	6.312	0.000	1.311
Cash flows	CFO	0.302	0.080	3.764	0.000	1.559
Leverage	LEV	0.812	0.149	5.444	0.000	2.432
Size	SIZE	0.229	0.049	4.667	0.000	2.038
Return on assets	ROA	1.521	0.361	4.210	0.000	3.303
The stock of board of director	MANSH	0.104	0.1144	0.911	0.363	1.759
The board non-executive members	INB	-0.038	0.058	-0.658	0.511	1.373
Major (Top)investor	TOPI	-0.458	0.173	-2.649	0.008	2.310
Institutional investor (shareholder)	INSSH	-0.023	0.122	-0.191	0.849	1.750
Group	GROUP	0.200	0.071	2.818	0.005	1.534
Capital cost	COE	0.837	0.169	3.175	0.002	2.660
Gender	GENDER	-0.360	0.077	-4.645	0.000	1.159
F statistic	Significance of F	R^2 model	Modified R^2	Durbin-Watson		
10.338	0.000	0.695	0.627	1.551		

4.4. Analysis of the results of the second research model

Concerning the results of Table 5, the F statistic's value is 10.191, and its significance is less than 0.05. Therefore, the whole regression model is accepted. It means that there is no significant relationship between the independent variables and the dependent variables. At least one independent variable has a significant relationship with the dependent variable. The results of the second research regression model are summarized in Table 5:

According to the results of Table 5 from the estimation of the research pattern, concerning the f-statistic value (10.191), the probability level is equal to (0.000) and less than 0.05; therefore, at the confidence level of 95%, it can be said that the overall research pattern is well-fitted and highly significant. The interactive effect coefficient is negative and equal to -0.114, and its corresponding t-statistic is -0.318. Since the absolute value of t statistic is less than 2, and its significance level is greater than 0.05. Therefore, the significant effect of overconfidence on the relationship between social responsibility and corporate performance cannot be accepted, and the second hypothesis is rejected. Furthermore, about the adjusted coefficient of determination of the model, which is 0.62, it can be stated that independent variables can explain more than 62% of the corporate financial performance. Besides, since the obtained value of Durbin-Watson is 1.547, and it is in the range of 1.5 to 2.5, it can be said that there is no serial autocorrelation between the residuals of the research pattern. Since the increasing variance factor (VIF) for independent variables is less than 5%, therefore, it is confirmed that there is no collinearity between the independent variables. The results of the research hypotheses will be discussed.

4.5. Analysis of the results of the third research model

About Table 6, it is observed that the F statistic is 10.369 and its significance level is less than 0.05. As a result, the whole regression model is accepted. There is a significant relationship between the independent variables and the dependent variables, and at least

one independent variable has a significant relationship with the dependent variable. The results of the third research regression model are summarized in Table 6:

Table 5. The results of the second research model estimation

Variables	Symbol	Coefficient	Standard deviation	t-statistic	Significance	VIF
y-intercept	β0	-2.011	0.786	-2.560	0.011	
Social responsibility	CSR	0.722	0.133	5.410	0.000	1.840
Overconfidence	OVERINV	-0.021	0.052	-0.408	0.683	1.476
Interactive effect	CSR*OVERINV	-0.114	0.358	-0.318	0.751	1.670
Cash flow	CFO	2.286	0.109	2.620	0.009	1.661
Leverage	LEV	0.817	0.143	5.706	0.000	2.534
Size	SIZE	0.232	0.053	4.401	0.000	2.044
Return on assets	ROA	1.557	0.330	4.720	0.000	3.400
The stock of board of director	MANSH	0.106	0.111	0.957	0339	1.784
The board non-executive members	INB	-0.037	0.056	0.503	0.511	1.413
Major (Top)investor	TOPI	-0.461	0.182	-2.532	0.012	2.370
Institutional investor	INSSH	-0.018	0.117	-0.152	0.879	1.826
Group	GROUP	0.195	0.064	3.044	0.002	1.527
Capital cost	COE	0.540	0.171	3.169	0.002	2.787
Gender	GENDER	-0.374	0.069	-5.414	0.000	1.513
F statistic	Significance of F	R^2 model	Modified R^2	Durbin-Watson		
10.191	0.000	0.695	0.627	1.547		

Table 6. The results of the third research model estimation

Title	Symbol	Coefficient	Standard deviation	t-statistic	Significance	VIF
y-intercept	β0	-1.975	0.719	-2.747	0.006	
Social responsibility	CSR	0.815	0.132	6.181	0.000	2.306
Narcissism	OVERINV	0.106	0.031	3.469	0.001	1.227
Interactive effect	CSR*OVERINV	-0.238	0.183	-1.301	0.194	2.022
Cash flow	CFO	2.283	0.090	3.147	0.002	1.581
Leverage	LEV	0.802	0.148	5.399	0.000	2.393
Size	SIZE	0.225	0.046	4.909	0.000	2.084
Return on assets	ROA	1.544	0.349	4.425	0.000	3.239
The stock of board of director	MANSH	0.103	0.110	0.940	0.384	1.766
The board non-executive members	INB	-0.037	0.071	-0.520	0.603	1.396
Major (Top)investor	TOPI	-0.475	0.169	-2.807	0.005	2.368
Institutional investor	INSSH	-0.010	0.127	-0.077	0.939	1.843
Group	GROUP	0.199	0.072	2.756	0.006	1.536
Capital cost	COE	0.546	0.164	3.327	0.001	2.655
Gender	GENDER	-0.360	0.079	-4.567	0.000	1.559
F statistic	Significance of F	R^2 model	Modified R^2	Durbin-Watson		
10.369	0.000	0.699	0.631	1.558		

According to the results of Table 6 of the research pattern estimation and concerning f statistic (10.369), the probability level is (0.000) and is less than 0.05. Therefore, at the confidence level of 95%, it can be said that the overall research pattern is well-fitted and highly significant. The interactive effect coefficient is negative and equal to -0.238, and the t-statistic is less than 2, and its significance level is greater than 0.05. Therefore, CEO narcissism's significance on the relationship between social responsibility and firm performance cannot be accepted, so the third hypothesis is also rejected. Also, regarding the adjusted coefficient of determination of the model, which is equal to 0.63, it can be concluded that independent variables can explain more than 63% of the corporate financial performance. Since the Durbin-Watson value is 1.558 and its range is from 1.5 to 2.5, it can be said that there is no serial autocorrelation between the residuals of the research pattern. Furthermore, since the increasing variance factor (VIF) value for all independent variables is less than 5%, it is confirmed that there is no collinearity between the independent variables. In the following, the results of the research hypotheses will be discussed.

5. Conclusion

The first research hypothesis said that there is a significant relationship between social responsibility and financial performance. As shown in the regression analysis, the significance level of the social responsibility value in the first model is less than 5%, so that the social responsibility coefficient variable is significant. Thus, there is a significant relationship between social responsibility and financial performance, and therefore, the result of the first hypothesis research is confirmed. In explaining this hypothesis's results, we can point out that financial performance is affected by social responsibility. So if the company addresses the dimensions of social responsibility as a non-financial performance of the firm, such as human resources, environmental issues, community responsibilities, etc., they will profit in the long term. Furthermore, by considering social responsibility, more investors will be attracted to the company, thereby, the firm's financial performance. In other words, with more respect for social responsibility, the financial performance of the company will be better. The results of this hypothesis are in coincidence with the results of Szegedi et al. (2020) and Awaysheh et al. (2020) and Khajawi et al. (2018), and Amiri et al. (2013). According to the results, paying attention to individuals and interest groups will increase companies' profit in the long run because it motivates the workforce, increases social goodwill and trust in each other, and reduces fines.

The second hypothesis of the study stated that CEO overconfidence had a significant effect on the relationship between social responsibility and financial performance. As shown in the regression analysis, the significance level of the interactive effect in the second model is more than 5%, so the coefficient of the interactive effect variable is not significant, which means that the CEO's overconfidence has no significant effect on the relationship between social responsibility and financial performance. Thus the second hypothesis of the research is rejected. In explaining the results of the negative relationship between the interactive effect of social responsibility and overconfidence, it can be concluded that individuals with overconfidence tend to have less social responsibility. With their optimistic view of the outcome of their decisions, these people consider the benefits of social responsibility less than their investment decisions. They, therefore, view social responsibility as costly and less profitable. Hence, people with more trustworthy behavior are less likely to take social responsibility. The results of this hypothesis are inconsistent with the results of Park et al. (2019) and Akbari et al. (2015), and McCarthy et al. (2017). Akbari et al. (2015) and McCarthy et al. (2017) suggest a significant negative relationship between CEO overconfidence and social responsibility. Stefanie

and Hahn (2018) found a weak positive relationship between overconfidence and financial performance. This discrepancy between the results of this study and the research, as mentioned above, could be due to the interactive effect of overconfidence on the relationship between social responsibility and financial performance and the difference in measurement criteria, especially the moderator variable (overconfidence).

The third hypothesis of the study stated that CEO narcissism significantly affected the relationship between social responsibility and financial performance. As shown in the regression analysis, the significance level of interactive effect in the third model of the study is more than 5%, so the coefficient of interactive effect variable is not significant, which means that the CEO narcissism has no significant effect on the relationship between social responsibility and financial performance. The third hypothesis is also rejected. In explaining the results of the positive and significant relationship between narcissism and financial performance, it can be concluded that narcissists who are keen to attract attention and exaggerate their efforts to improve the company's financial performance to get the admiration and attention of the stakeholders. By considering the negative relation of the interactive effect between narcissism and social responsibility, it can be concluded that narcissists do not believe in social responsibility and consider themselves and their performance much higher than social responsibility performance and its effects. In other words, if you go to a company that has a narcissistic manager, there is less social responsibility in this company. The results of this hypothesis are inconsistent with the results of Khajavi et al. (2018), Khajavi et al. (2015), and Daniel Mc and Guoli Chen (2018). The results of the Yi Tang et al. (2018) and Khajavi et al. (2015) researches are as follows: Yi Tang et al. (2018) and Khajavi et al. (2015) found a significant positive relationship, and Petrenko et al. (2015) found a significant negative relationship between their two variables. This discrepancy between this study's results and the studies mentioned above can also be attributed to the interactive effect of narcissism on the relationship between social responsibility and financial performance. Also, the differences in the criteria for measuring variables, especially the moderator variable (narcissism), are relevant.

According to the results of the present study, it can be stated that in Iran, managers CEO’s with overconfidence are also narcissistic. This is because the effects of the CEO's overconfidence on social responsibility and the relationship between social responsibility and financial performance are similar to the CEO's narcissistic effect on these variables.

Based on the results of the research hypotheses, a practical suggestion is presented in this way: Due to the weakening of the relationship between the CEO’s overconfidence and social responsibility of the company, as well as the CEO’s narcissism and social responsibility, investors are suggested to examine the CEO's personality firstly. Then start investing. Because people with these personalities do not seek social responsibility. Investors, especially large investors of institutions, are recommended to prioritize companies with a high social responsibility reporting level. Organizations are advised to ignore the costs and capital expenditure related to social responsibility and disclose social responsibility information to improve financial performance and outperforming competitors. It is also suggested that social responsibility disclosure should be switched from optional mode to mandatory mode. In this case, companies will have to disclose information about the community, which will benefit the companies themselves due to stakeholders' trust. It is also suggested to researchers for future research that other available methods can be used to measure overconfidence, such as the estimated profits deviation from realized actual profits. If that is the case, the results will likely be meaningful. Other criteria can also be used to measure narcissistic variables or in combination with several existing criteria, such as signature size, image size, and managers' cash reward ratio. If that is the case, the results will likely be meaningful.

Finally, one of this study's limitations is the non-quantitative and tasteful data related to measuring social responsibility. This limitation is because the measurement is not accurate enough and will vary according to different people's tastes and opinions. Also, since the CEO's over-confidence variable depends on the individual's personality traits, the period under study should be as short as possible. In this case, the board of directors and CEOs' relocation will produce better and more reliable results. One of the resulting problems is the shorter period and reducing the number of observations.

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