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MASTER
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MASTER'S FINAL WORK
DISSERTATION

THE EFFECTS OF NARCISSISM ON THE CEO'S PROPENSITY TO TAKE RISK

SÓNIA ISABEL PIRES PEREZ BRANDÃO

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SUPERVISION:

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Abstract

Chief Executive Officers (CEOs) are individuals with power on decisions and that will impact on society. If the CEOs display grandiose tendencies, i.e., if they display narcissism tendencies, they may be more likely to incur in riskier actions. Given the influence of CEOs, and the dangers that may arise from narcissism, it is of major importance, for both academic and well-being purposes to study the impacts that this trait may have on CEOs and its connection to risk taking behaviors. To that end, a sample of the Portuguese CEOs of joint stock companies was used. The results show that narcissism is positively related to the CEO's propensity to risk. These findings suggest that hiring CEOs with narcissistic traits may lead the company to incur in more risk and that shall not be ignored, in particular if it has a detrimental effect on the stakeholder's wealth.

Keywords: Narcissism; Risk; CEO; Narcissistic Personality Inventory; Narcissistic Admiration and Rivalry; Risk Tolerance; Domain-Specific Risk-Taking.

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Abbreviations

APA – American Psychiatric Association

CEO – Chief Executive Officer

NPD – Narcissistic Personality Disorder

NPI – Narcissistic Personality Inventory

SINS - Single Item Narcissism Scale

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1. Introduction

Narcissists, those that have an inflated view of the self, use a range of intrapersonal (from their own thoughts) and interpersonal (from the thoughts of other people concerning them) strategies for maintaining positive self-views. For example, narcissists fantasize about fame or power (Raskin & Novacek, 1991). According to Freud (1957) we are all somehow narcissistic, and still, due to its association with something immoral makes it become a sensitive and difficult topic to approach (Chatterjee & Hambrick, 2007). Given the craving for power arising from narcissism, it is very common for narcissists to achieve top-level management functions.

Actions and decisions of top-level managers are highly influenced by their personalities and past experiences (Carpenter, Geletkanycz & Sanders, 2004; Finkelstein & Hambrick, 1996). Prior research has also identified narcissism as a fundamental personality dimension of CEOs that influences strategic decisions (Chatterjee & Hambrick, 2007, 2011; Gerstner, Kogner & Hambrick., 2013), and narcissism is likely to influence a CEO's learning based on prior experience with corporate strategies (Zhu & Chen, 2014). Therefore, and given the impact of the decisions made by CEOs, it is interesting to study the association between CEOs narcissism and the possible outcomes arising from this connection., e.g. risk propensity.

This study examines the relationship between narcissism and risk, at the CEO level. After using two scales of risk and two scales of narcissism to measure this relation, the results show that CEOs with higher levels of narcissism do incur in more risks.

The remainder of the dissertation is organized as follows. Chapter two contains the Literature Review; chapter 3 contains the Data and Methodology and chapter 4 presents the obtained results. Finally, chapter 5 contains the conclusions limitations and future suggestions of research.

2. Literature Review

2.1 Personality and personality disorders

Personality traits are enduring patterns of perceiving, relating to, and thinking about the environment and oneself, and are exhibited in a wide range of important social and personal contexts (American Psychiatric Association, 1987). When personality traits are inflexible and maladaptive and cause either significant functional impairment or subjective distress they constitute Personality Disorders (American Psychiatric Association, 1987). Usually, personality disorders are recognized in adolescence or earlier and continue throughout most of adult life, though they often become less obvious in middle or old age (American Psychiatric Association, 1987).

According to the American Psychiatric Association (APA), psychiatrists use a system of diagnosis which identifies 10 types of personality disorders, grouped into three clusters, based on descriptive similarities within each cluster: Cluster A (the "odd, eccentric" cluster), that describes social awkwardness and social withdrawal as personality features; Cluster B (the "dramatic, emotional, erratic" cluster) that concerns people with impulse control and emotional regulation; and, Cluster C (the "anxious, fearful" cluster), that describes inhibition and feeling of inadequacy. Cluster B includes the Narcissistic Personality Disorder (NPD) along with the Borderline Personality Disorder, the Histrionic Personality Disorder and the Antisocial Personality Disorder. The Narcissistic Personality Disorder is characterized by feelings of self-importance and an

urge to be admired by others, and people who act in accordance with this are entitled as narcissists.

2.2 Narcissism

Narcissism is an ancient term that comes from the Greek Mythology, it refers to Narcissus, a boy that fell in love with his own reflection on a lake, and unable to leave it, vanishes. In 1914, Sigmund Freud introduced the term in psychoanalytic theory, and in 1968 it was listed as a personality disorder.

Narcissism describes people with excessive need for admiration and affirmation (Guedes, 2017). A narcissistic individual sees herself as the center of everything, taking into consideration that everyone must serve her purposes and that she is the keeper of the absolute truth (Ohmann & Burgmer, 2016). Narcissists live under the illusion that they are entitled to be served, that their own wishes take precedence over those of others (de Vries & Miller, 1985). Narcissists crave applause (Buss & Chiodo, 1991; Wallace & Baumeister, 2002); more generally, narcissists require ''narcissistic supply,'' or the fuel for their reinforced self-images, from others (Kernberg, 1975).

Narcissism has two sides: a bright and a dark one (Braun, 2017). The bright side can be defined as when narcissists create an initial empathy by giving the impression that they have visionary ideas and the ultimate solutions, making their counterparts feel confident. Their characteristics usually include aspects such as self-assuredness, charm, and interpersonal success (Back, Küfner, Dufner, Gerlach, Rauthmann & Denissen, 2013). On the other hand, the dark side of a narcissist occurs when they are at their worst, resulting in self-serving and manipulative acts, that emerges when narcissists let their guard down (Braun, 2017). The distinctive characteristics rely on their antagonistic orientations, aggressiveness, and social conflict (Back, Küfner, Dufner, Gerlach,

Rauthmann & Denissen, 2013). According to Freud (1957) we are all somewhat narcissistic, the difference is that the bright side of narcissism can be seen as productive narcissism, from which the society can benefit, they are gifted and creative strategists who see the big picture and find meaning in the risky proposition of changing the world and leaving behind a legacy (Maccoby, 2000). They can be described as charmers, who convert the masses, and even though they usually are risk takers, it is only to achieve their purpose. Even though productive narcissists may have several benefits to our society, there is an inherent risk concerning them, it is that there is a fine line for them to become unproductive. When a productive narcissist lacks self-knowledge and restraining anchors, narcissists become unrealistic dreamers and even brilliant narcissists can come under suspicion for self–involvement and unpredictability (Maccoby, 2000).

Narcissism is becoming an increasingly characteristic in society; It is shown that there is more narcissism among recent generations of young people compared to their predecessors (Twenge, 2013). Given that, it is of major importance to understand the behavior of narcissism to account for the impact that it will have on future leaders.

2.3 CEO Narcissism

As individualistic leaders, they tend to be decision makers, who disregard the others in order to achieve their own objectives. They are oblivious to others' wellbeing as long as their own needs for self-affirmation and external validation are fulfilled (Braun, 2017). Furthermore, they possess an extreme need for self-enhancement which manifests in grandiose self-promotion, unrealistic optimism and self-entitlement (Tamborski, Brown & Chowning, 2012). Narcissists often pursue leadership and are selected for leadership positions by others. At the same time, they act in their own best interest, putting the needs and interests of others at risk (Braun, 2017).

Narcissistic leaders have grandiose belief systems and leadership styles, and are generally motivated by their needs for power and admiration rather than empathetic concern for the constituents and institutions they lead (Rosenthal & Pittinskya, 2006; Braun, 2017). Power is one of the great motivators for narcissistic leaders. They not only seek to accumulate power while ascending the ranks, but even when they seem to have reached the pinnacle of entrenched power, they continue to crave and seek more of it, often at great risk to themselves and their followers (Glad, 2002). For instance, the thirstiness for power present on some narcissistic CEOs leads them to make large acquisitions because they believe they have the ability to make better deals and to manage acquisitions better than their peers (Chatterjee & Hambrick, 2011).

CEO and narcissism are often associated. De Vries & Miller (1985) suggested that an underlying narcissistic personality dimension is prevalent in most leaders, and that the nature and degree of narcissism reflect in leaders' behaviors. Narcissism influences key leadership activities, including environmental scanning, decision making, and relations with subordinates. Narcissistic CEOs tend to attribute their successes to their own superior abilities, while attributing their failures, or poor performance, to external conditions (Bowman, 1976; Bettman & Weitz, 1983; Staw, McKechnie, & Puffer, 1983).

The CEO narcissism also has a dark and a bright side. Regarding the bright side, certain narcissistic traits are positive leadership characteristics, such as the appearance of supreme confidence and dominance that are hallmarks of narcissism, are in some cases exactly what inspire a group of followers, such as a board of directors, to select a narcissist to lead them (Gladwell, 2002; Hogan & al., 1994; Post, 1986). On the other hand, there is the dark side, which defines narcissists as being notoriously poor, over involved and abusive managers (Hogan, Curphy, & Hogan, 1994). Narcissistic leaders, at their worst, resist advisers' suggestions, take more credit for successes than they are due, and blame

others for their own failures and shortcomings (Hogan, Raskin & Fazzini, 1990). Therefore, Deluga (1997) suggested that some of the most and least successful presidents were highly narcissistic, whereas others of the most and least successful were not.

2.4. CEO Risk

The personal risk-taking of a CEO depends on her propensity towards risk, which is related to her personality traits and life experiences. The CEO personal characteristics, such as religion (Hilary & Hui, 2009), political preferences (Hutton & Kumar, 2014), optimism and risk-aversion (Graham, Harvey & Puri, 2013), sensation seeking (Cain & Mckeon, 2016), influence corporate behavior and risk-taking. Thus, understanding the CEOs' personal characteristics and the relationship with corporate risk-taking is important because the CEO, as a firm's chief agent, sets the tone for the riskiness of corporate policies (Ferris, Javakhadze & Rajkovic, 2017).

Given that the firm performance will depend on the CEOs decisions, it is of major importance to account for the risk impact. If there is a positive relationship between CEO and risk-taking, the career concerns of a CEO, rather than her power or experiences, may be the dominant effect of tenure in its positive relation with risk-taking (Chen & Zheng, 2014). The approach-inhibition theory of Keltner, Gruenfeld & Anderson (2003) argues that the experience of power drives people to take more risks. The exposure to a particular macroeconomic, personal, or career-specific event has a unidirectional effect on CEO risk taking, and consequently on corporate policies (Bernile, Bhagwat & Rau 2017). Furthermore, the CEO social capital, which is defined by Woolcock (1998), as the information, trust and norms of reciprocity inherent in a social network, where the social network is the real-world links between groups or individuals, positively affects corporate risk-taking choices (Ferris, Javakhadze & Rajkovic, 2017).

2.5 Risk and Narcissism

Narcissistic individuals take bigger risks than non-narcissistic ones, given that they display a distinctive approach orientation. They are focused on success and achievement and display little conscious avoidance orientation or fear of failure (Elliot & Thrash, 2001). Several authors support the idea that narcissists are prone to overconfidence and risk- taking (e.g. Campbell & al., 2004; Foster, Shenesey & al., 2009; Lakey & al., 2008). Narcissistic individuals are also characterized by their overconfidence, which, according to Roll (1986) is a major ingredient in executive risk taking. The risks incurred by narcissistic individuals, who do not take into account the means to their ends, throughout their myopic focus on reward may lead to unfortunate events (Foster, Shenesey & Goff, 2009).

Among the personality factors that enter into risk taking, narcissism can play a prominent role, particularly on the CEOs' case, where they can incur in bigger risks, such as mergers and acquisitions. CEOs incur in those risks because they believe they have the ability to make better deals and to manage acquisitions better than their peers (Chatterjee & Hambrick, 2011). As a consequence, narcissist CEOs make riskier decisions and are less interested in low-risk decisions than non-narcissists, and thus loose more often than do non-narcissists (Campbell & Foster 2004; Campbell &Goodie, 2004).

The literature corroborates an overall agreement on the positive relation between risk and narcissistic CEOs (e.g. Chatterjee & Hambrick, 2011). This relationship means that narcissistic CEOs tend to be more likely to incur in risks than non-narcissistic ones. In line with the evidence presented, the general proposed hypothesis is:

H1: Highly narcissistic CEOs will incur in more risk taking.

3. Data Description and Methodology

3.1. Data Description

The data was collected through an online questionnaire, which was sent by e-mail, provided by Informa D&B and using the *Qualtrics* software. The e-mails where sent to Portuguese active joint stock companies and requested to be answered by the CEO.

The questionnaire is a method that enables the collection of data in an easy way, low cost, fast and allows the companies to answer anonymously. However, according to Wright, 2005), there are also disadvantages that should be considered by the researcher, such as sampling issues and access issues. Also, according to Hoonakker & Carayon (2009), there is a risk that the e-mail is easily ignored and discarded, which frequently leads to low response rates. So that the questionnaire would be appropriate and plausible it was previously pre-tested, twice, by management professionals and went through a trial period. The initial sample comprises 100348 e-mail addresses and 9972 were sent back or not delivered. To achieve a higher number of responses the questionnaire was re-sent two weeks after the first mailing. A total of 3593 final responses were obtained. The questionnaires where the respondents did not occupy a management position were excluded. Therefore, the final sample comprises a total of 1192 CEOs.

A complete description of the sample is available on Annex I. Out of the 1192 individuals that form the sample, 70,47% are males, 71,06% are married. The average age is of 47 years old, ranging from a minimum of 19 years old and a maximum of 76 years old; 38,51% have an undergraduate degree, being that the most representative group of the degree of studies and the most frequent level of income ranges from 20,000€ to 40,000€, representing 30,50% of the sample.

3.2. Measures and Scales

The objective of this study is to understand whether if the CEOs of Portuguese companies with higher levels of narcissism have more propensity to risk. For that purpose, it is necessary to measure narcissism and risk, as well as the socio-demographic variables.

Narcissism

Narcissism was measured using two different scales: The Narcissistic Personality Inventory-16 (NPI-16), and the Narcissistic Admiration and Rivalry Questionnaire (NARQ).

The NPI-16 scale was created and validated by Ames & Anderson (2006), and it was developed as a shorter, unidimensional measure of the NPI-40. The NPI-40 is a measure of narcissism, throughout 40 items related to it, however its length makes its use restricted in settings were time pressure and respondent fatigue are major concerns. Therefore, given the limited time of the target of the study, the CEOs, the NPI-16 was preferred. The use of this scale has as main advantage its shorter dimension, making it less time consuming. Furthermore, the results of this scale are coherent and consistent, and extensively validated in the literature (Ames & Anderson, 2006). The NPI-16 scale contains 16 statements, such as:" *I really like to be the center of attention/It makes me uncomfortable to be the center of attention"*, and "*I expect a great deal from other people/I like to do things for other people,*" where each of them has two possible answers, in each statement, one of the answers is consistent with a narcissistic attitude and the other with a non-narcissistic one. For each statement, the respondents were asked to choose the answer that best described their personality. In each statement, for the answer with the narcissistic component, it was attributed one point, and to the non-narcissistic one, zero

points. Finally, the NPI-16 score is the mean of all of the chosen answers, in this case per CEO, and the higher the final value, the more narcissistic the CEO is. The Cronbach's alpha coefficient of the scale is 0.88, which means that the measure has good reliability (Tavakol & Dennick, 2011).

The NARQ scale was developed and validated by Back, Küfner, Dufner, Gerlach, Rauthmann, & Denissen (2013). The model distinguishes two dimensions of narcissism: admiration and rivalry. The NARQ scale is composed by 18 statements, ranging from 1=not agree at all to 6=agree completely, such as: "*I show others how special I am*" and "*I can barely stand if another person is at the center of events*". The NARQ scoring is the mean of all the statements. The higher the final value, the more narcissistic the CEO is. This scale has as main advantage not being time consuming. Additionally, the results of this scale present very good internal consistencies and stabilities (Back, Küfner, Dufner, Gerlach, Rauthmann, & Denissen, 2013). The Cronbach's alpha coefficient of the scale is 0.83, which means that the measure has good reliability (Tavakol & Dennick, 2011).

Risk

Risk was evaluated through a subjective measure, via an online anonymous questionnaire. Two scales were used to evaluate risk: The Grable and Lytton Risk Tolerance scale and the Domain-Specific-Risk-Taking (DOSPERT).

The Grable and Lytton Risk Tolerance scale was developed and tested by Grable & Lytton (1999) to evaluate a person's willingness to engage in risky financial behavior. The scale is composed by 13 statements with multiple answers, such as: "*When you think of the word "risk", which of the following words comes to mind first?* "and "*In general*

how would your best friend describe you as a risk taker?" Each answer has a different score, for which those with higher risk correspond to a higher score and those with lower risk correspond to a lower score. The final scale scoring is the mean of the scores, the higher the final value, the higher the tolerance to risk of the CEO. The main advantages of this scale consist on being easy to administer and not being time consuming, given the extent of the scale, which has only 13 statements. Furthermore, the scale has been extensively validated (Kuzniak, Rabbani, Heo, Menjivar & Grable, 2015). The Cronbach's alpha coefficient of the scale is 0.72, which means that the measure has good reliability (Tavakol & Dennick, 2011).

The DOSPERT scale was created by Weber, Blais & Betz (2002) and developed into a scale for adult populations with a relationship between apparent risk taking and risk perception in 5 risk domains: Ethical; Financial; Health/Safety; Recreational, and Social (Blais & Weber, 2006). The scale is composed by 30 statements, such as: *"Taking a skydiving class"* and *"Riding a motorcycle without a helmet",* where each of them should be rated, according to the respondent's likelihood of engaging in the described activity or behavior, ranging from 1=extremely unlikely to 7=extremely likely. The final DOSPERT scale is the mean of the answers. Higher values on the scoring of each CEO indicate higher risk-taking behaviors and lower values indicate lower risk-taking behaviors. The main advantage of this scale consists on allowing the assess to both conventional risk attitudes defined as the reported level of risk taking) and perceived-risk attitudes (defined as the willingness to engage in a risky activity as a function of its perceived riskiness) and the applicability to respondents from a broader set of age groups, cultures and educational levels (Blais & Weber, 2006). Additionally, the scale has adequate internal consistency and reliability estimates (Weber, Blais, & Betz, 2002). The Cronbach's alpha coefficient

of the scale is 0.86, which means that the measure has good reliability (Tavakol & Dennick, 2011).

3.3 Variables

Table I presents the variables definitions.

TABLE I – Variables of the model

	Variable	Description
Dependent Variable	Risk (RISK)	Risk Tolerance Scale; DOSPERT Scale.
	Individual Related Variables	
Independent Variables	Narcissism (NPI16)	Narcissism score given by the NPI-16 scale.
	Narcissism (NARQ)	Narcissism score given by the NARQ scale.
	Age (AGE)	Age of the Respondents
	Gender (GEN)	0 if female; 1 if male.
	Professional Experience (EXP)	Number of years of professional experience.
	Education Level (EDU)	1 if less than high school; 2 if high school; 3 if undergraduate degree; 4 if post-graduation; 5 if master; 6 if PhD.
	Income (INC)	1 if up to 20.000€; 2 if 20.000 – 40.000€; 3 if 40.000 – 60.000€; 4 if 60.000 – 80.000€; 5 if 80.000 – 100.000€; 6 if 100.000€ or more.
	Marital Status (MAR)	1 if widowed; 2 if married; 3 if separated; 4 if divorced; 5 if single.

To study the relationship between CEO narcissism and risk, according to the hypothesis previously stated, a multiple linear regression analysis was performed for eight models, using the *SPSS* statistics software. The models are presented in equations 1 to 8. Risk is the dependent variable, that is given by the Risk Tolerance Scale on equations 1-

4 and by the DOSPERT scale on equations 5-8. The narcissism score, given by the NPI-16 and NARQ scales, is the main independent variable. Equation 1 concerns the relation between the Risk Tolerance and the NPI-16; equation 2 adds as controls the variables related to the individual, such as: age; gender; professional experience; education level; income and marital status. Equation 3 considers the relation between the Risk Tolerance and the NARQ and equation 4 adds as controls the variables related to the individual. Equation 5 concerns the relation between the DOSPERT and the NPI-16; equation 6 adds as controls the variables related to the individual. At last, equation 7 considers the relation between the DOSPERT and the NARQ and equation 8 adds as controls the variables related to the individual. On the equations, α represents the constant, β the coefficients to estimate and ε is the error term.

(1) $\quad RISK_{Tolerance} = \alpha + \beta_1 NPI16 + \varepsilon$

(2) $\quad RISK_{Tolerance} = \alpha + \beta_1 NPI16 + \beta_2 AGE + \beta_3 GEN + \beta_4 EXP + \beta_5 EDU + \beta_6 INC + \beta_7 MAR + \varepsilon$

(3) $\quad RISK_{Tolerance} = \alpha + \beta_1 NARQ + \varepsilon$

(4) $\quad RISK_{Tolerance} = \alpha + \beta_1 NARQ + \beta_2 AGE + \beta_3 GEN + \beta_4 EXP + \beta_5 EDU + \beta_6 INC + \beta_7 MAR + \varepsilon$

(5) $\quad DOSPERT = \alpha + \beta_1 NPI16 + \varepsilon$

(6) $\quad DOSPERT = \alpha + \beta_1 NPI16 + \beta_2 AGE + \beta_3 GEN + \beta_4 EXP + \beta_5 EDU + \beta_6 INC + \beta_7 MAR + \varepsilon$

(7) $\quad DOSPERT = \alpha + \beta_1 NARQ + \varepsilon$

(8) $\quad DOSPERT = \alpha + \beta_1 NARQ + \beta_2 AGE + \beta_3 GEN + \beta_4 EXP + \beta_5 EDU + \beta_6 INC + \beta_7 MAR + \varepsilon$

4. Results

4.1. Descriptive Statistics

The descriptive statistics regarding risk, the dependent variable, and narcissism, the main independent variable, are shown in Annex II, for both Risk Tolerance and DOSPERT, as well as NPI-16 and NARQ.

Risk Tolerance has a mean score of 2,03. The sentence with higher score is "*You are on a TV game show and can choose one of the following, which would you take?*" with a mean of 2,60 and the one with a lower score is "*If you had to invest $20,000, which of the following investment choices would you find most appealing?* "with a mean of 1,37.

DOSPERT has a mean of 3,14. The sentence with higher score is "*Admitting that your tastes are different from those of a friend*", with a mean of 5,97 and the one with lower score is "*Revealing a friend's secret to someone else*, with a mean of 1,68".

On what concerns narcissism, the NPI-16 has a mean of 4,79. The sentences with higher score are "*I am going to be a great person/I hope I am going to be successful*" and "*I insist upon getting the respect that is due to me/I usually get the respect that I deserve*", both with a mean of 0,59. The ones with a lower score are "*I think I am a special person/I am no better or worse than most people*" and "*I am an extraordinary person/I am much like everybody else*", both with a mean score of 0,12. Also concerning narcissism, the NARQ is composed by 18 pairs of statements, and the first row indicates the final score, that is 2,81. The sentence with a higher score is "*I enjoy my successes very much*" with a score of 5,01, and the one with lower score is "*Other people are worth nothing*", with a mean of 1,33. Table II presents the descriptive statistics of the scales, Table III presents

the descriptive statistics of the independent variables and Table IV presents the Pearson

correlations for the used variables.

Table II – Descriptive Statistics of the Scales

	Min.	Max.	Mean	SD	Observations
NPI-16	0	16	4,79	0,19	1192
NARQ	1	6	2,81	0,65	1192
RTS	1	4	2,03	0,40	1192
DOSPERT	1	7	3,14	0,75	1192

Note: Min. is for minimum; Max, is for maximum; SD is for standard deviation

Table III – Descriptive Statistics of the Independent Variables

	Min.	Max.	Mean	SD	Observations
Gender	0	1	0,70	0,46	1192
Marital Status	1	5	2,69	1,17	1192
Income	1	6	2,60	1,51	1192
Education Level	1	6	3,36	1,15	1192

Note: Min. is for minimum; Max, is for maximum; SD is for standard deviation

Table IV - Pearson Correlations

	NPI 16	NARQ	RTS	DOSPERT	Age	Gender	Professional Experience	Education Level	Income	Marital Status
NPI 16	1									
NARQ	0,592***	1								
RTS	0,234***	0,155***	1							
DOSPERT	0,263***	0,282***	0,426***	1						
Age	0,097***	-0,155***	0,011	-0,169***	1					
Gender	0,042	0,072**	0,159***	0,212***	0,082***	1				
Professional Experience	-0,063**	-0,082***	0,018	-0,114***	0,723**	0,128***	1			
Eduaction Level	0,193***	0,096***	0,149***	0,177***	-0,030	-0,045	-0,079***	1		
Income	0,205***	0,078***	0,234***	0,136***	0,299***	0,177***	0,294***	0,281***	1	
Marital Status	0,016	0,043	0,027	0,107***	0,304***	-0,064**	-0,288***	0,088***	0,129***	1

Note: *, ** and *** indicate significance levels of 10%, 5% and 1%, respectively.

4.2. Linear Regression Models

Table V shows the results of the linear regressions, with risk as the dependent variable, represented by the Risk Tolerance and table VI shows the results of the linear regression, with DOSPERT as risk measure. Each column shows the results for the equations previously defined:

Table V – Linear Regression Model Results of Risk Tolerance

Variables	(1) NPI16	(2) NPI16 + Controls	(3) NARQ	(4) NARQ + Controls
Constant	1,881***	2,169***	1,765***	2,124***
	(0,021)	(0,098)	(0,051)	(0,109)
NPI16 score	0,502***	0,372***		
	(0,060)	(0,062)		
NARQ score			0,095***	0,071***
			(0,018)	(0,017)
Age		-0,009		-0,010
		(0,016)		(0,016)
Gender				
Male		0,114***		0,111***
		(0,025)		(0,025)
Professional Experience		-0,012		-0,014
		(0,015)		(0,015)
Education Level				
Less than High School		-0,124		-0,122
		(0,104)		(0,105)
High School		-0,024		-0,029*
		(0,017)		(0,017)
Undergraduate Degree		-0,017		-0,020*
		(0,011)		(0,011)

Post-Graduate		-0,003		-0,004
		(0,009)		(0,009)
Masters Degree		-0,018		-0,019
		(0,014)		(0,014)

Income

Until 20,000€		-0,177***		-0,199***
		(0,034)		(0,034)
20,000 – 40,000€		-0,036**		-0,043***
		(0,015)		(0,015)
40,000 – 60,000€		-0,011		-0,012
		(0,013)		(0,013)
60,000 – 80,000€		-0,015		-0,017
		(0,013)		(0,013)
80,000 – 100,000€		-0,010		-0,011
		(0,012)		(0,012)

Marital Status

Widowed		0,053		0,061
		(0,117)		(0,118)
Married		-0,072**		-0,075**
		(0,035)		(0,035)
Separated		0,047		0,051
		(0,035)		(0,035)
Divorced		0,015		0,017
		(0,011)		(0,011)
Observations	1192	1192	1192	1192
R-squared	0,055	0,122	0,024	0,108

Note: Standard error in parenthesis. *, ** and *** indicate significance levels of 10%, 5% and 1%, respectively.

Table VI – Linear Regression Model Results of DOSPERT

Variables	(5) NPI16	(6) NPI16 + Controls	(7) NARQ	(8) NARQ + Controls
Constant	2,766***	3,417***	2,174***	2,987***
	(0,040)	(0,177)	(0,092)	(0,196)
NPI16 score	1,057***	0,767***		
	(0,112)	(0,112)		
NARQ score			0,324***	0,250***
			(0,032)	(0,031)
Age		-0,131***		-0,120***
		(0,029)		(0,029)
Gender				
Male		0,352***		0,335***
		(0,045)		(0,045)
Professional Experience		-0,014		-0,022
		(0,027)		(0,027)
Education Level				
Less than High School		0,038		0,038
		(0,189)		(0,187)
High School		-0,022		-0,028
		(0,031)		(0,031)
Undergraduate Degree		-0,043**		-0,047**
		(0,019)		(0,019)
Post-Graduate		-0,022		-0,024
		(0,017)		(0,017)
Masters Degree		0,017		0,015
		(0,025)		(0,025)
Income				
Until 20,000€		-0,201***		-0,232***

	(0,061)	(0,060)
20,000 – 40,000€	-0,031	-0,043
	(0,027)	(0,027)
40,000 – 60,000€	-0,020	-0,019
	(0,023)	(0,023)
60,000 – 80,000€	0,008	0,001
	(0,024)	(0,024)
80,000 – 100,000€	-0,015	-0,015
	(0,022)	(0,022)

Marital Status

Widowed		0,526**		0,539**
		(0,213)		(0,211)
Married		-0,123*		-0,135**
		(0,063)		(0,063)
Separated		0,055		0,068
		(0,063)		(0,062)
Divorced		0,010		0,013
		(0,021)		(0,020)
Observations	1192	1192	1192	1192
R-squared	0,069	0,179	0,079	0,191

Note: Standard error in parenthesis. *, ** and *** indicate significance levels of 10%, 5% and 1%, respectively.

In all of the estimated regressions, narcissism has a positive, significant association with risk. Therefore, the individual related variables, such as: marital status, except for married, and gender are also positively associated with risk. These results indicate that the narcissism influences the CEOs' propensity to take risk, therefore the proposed hypothesis is accepted.

The obtained results are in accordance with the literature, the narcissistic personality is prevalent in most leaders, and it reflects on the leaders' behavior (de Vries

& Miller, 1985). Narcissism seems to increase risk-taking decisions (Campbell & Foster, 2004, Campbell & Goodie, 2004).

5. Conclusions

5.1. Final Conclusions

CEOs behavior and decisions have a major impact, not only on their companies, but also on society, given the importance and power of an action incurred by a CEO. Therefore, their personality must be understood, since it affects the way they communicate, the decisions they make and the propensity to risks they might have. Narcissism, and its perception as an obscure personality trait turns it into a sensitive topic, for which data might be hard to collect, and so restricts the amount of studies concerning it. Nevertheless, it is a distinctive trait of people's personalities and more studies about narcissism may help to understand how to deal with the problems arising from it.

According to the literature review and using a linear regression model to study the relation between CEO's narcissism and risk, 4 scales were used: 2 of risk, the Risk Tolerance Scale and the Domain-Specific Risk-Taking; and 2 of narcissism, the NPI – 16 and the NARQ.

The results show a positive relation between risk and narcissism, which implies that, according to the study, CEOs who are more narcissistic incur in more risks. Therefore, the hypothesis: *Highly narcissistic CEOs will incur in more risk taking* is accepted. This is in line with previous studies such as those of Campbell & Foster (2004) and Campbell & Goodie (2004). This study contributes to the related literature by showing that firms should be aware of whether their CEOs are narcissistic or not, given that if they are narcissistic, they may incur in more risks, that may lead to bad outcomes. The relevance of this study lies into an important lesson: be aware of the CEOs real

personality, and do not fall into their narcissistic charm; because that may lead to a dangerous risk-taking behavior.

5.2. Limitations and Future Research

Some of the limitations regarding this study are related to the method used for collecting the data, the online questionnaire. There are a lot of individuals that do not answer and people other than the target, the CEOs, might answer to the questionnaire, given that it is not possible to control who assesses it. Also, the respondents might answer to some questions randomly and skip some of them. Concerning the scales used, some of them were too extensive, which might be time consuming, and lead to a smaller response rate. Also, there were some questions within the scales that might be ambiguous to some respondents. Therefore, the results should be interpreted with caution and according to the limitations stated.

For future research, those points might be interesting to assess and understand how to overcome them. In this study, the gender was not discriminated in the stated hypothesis, and it might also be interesting to understand the CEO's narcissism impact on risk taking on the female gender.

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Annex

Annex I - Sample Description

		Frequency	Percentage
Age	18 – 24 years old	6	0,5
	25 – 34 years old	116	9,7
	35 – 44 years old	422	35,4
	45 – 54 years old	393	33,0
	55 – 64 years old	193	16,2
	More than 65 years old	62	5,2
	Total	1192	100
Gender	Female	352	29,5
	Male	840	70,5
	Total	1192	100
Professional Experience	4 years or less	46	3,9
	5 – 9 years	100	8,4
	10 – 19 years	335	28,1
	20 – 29 years	373	31,3
	More than 30 years	338	28,3
	Total	1192	100
Eduaction Level	Less than High School	15	1,3
	High School	274	23,0
	Undergraduate Degree	459	38,5
	Post-graduation	186	15,6
	Masters Degree	222	18,6
	PhD	36	3,0
	Total	1192	100
Income Level	20,000€ or less	324	27,3
	20,000€ – 40,000€	364	30,5
	40,000€ – 60,000€	229	19,2
	60,000€ – 80,000€	113	9,5
	80,000€ – 100,000€	65	5,4
	100,000€ or more	97	8,1
	Total	1192	100

Marital	Widowed	11	0,9
Status	Married	847	71,0
	Separated	14	1,2
	Divorced	145	12,2
	Single	175	14,7
	Total	1192	100

Annex II - Descriptive Statistics of Risk and Narcissism

	Min.	Max.	Mean	SD	α
Risk Tolerance score	13	47	2,03	0,40	0,72
1. In general, how would your best friend describe you as a risk taker?	1	4	2,60	0,68	
2. You are on a TV game show and can choose one of the following, which would you take?	1	4	2,27	0,93	
3. You have just finished saving for a "once-in-a-lifetime" vacation. Three weeks before you plan to leave, you lose your job. You would:	1	4	2,01	0,87	
4. If you unexpectedly received $20,000 to invest, what would you do?	1	3	1,79	0,64	
5. In terms of experience, how comfortable are you investing in stocks or stock mutual funds?	1	3	1,41	0,58	
6. When you think of the word "risk," which of the following words comes to mind first?	1	4	2,25	0,61	
7. Some experts are predicting prices of assets such as gold, jewels, collectibles, and real estate (hard assets) to increase in value; bond prices may fall, however, experts tend to agree that government bonds are relatively safe. Most of your investment assets are now in high interest government bonds. What would you do?	1	4	1,68	0,76	
8. Given the best and worst case returns of the four investment choices below, which would you prefer?	1	4	2,44	0,87	
9. In addition to whatever you own, you have been given $1,000. You are now asked to choose between:	1	3	1,67	0,95	
10. In addition to whatever you own, you have been given $2,000. You are now asked to choose between:	1	3	2,35	0,95	
11. Suppose a relative left you an inheritance of $100,000, stipulating in the will that you invest ALL the money in ONE of the following choices. Which one would you select?	1	4	2,29	1,23	

12. If you had to invest $20,000, which of the following investment choices would you find most appealing?	1	3	1,37	0,56	
13. Your trusted friend and neighbor, an experienced geologist, is putting together a group of investors to fund an exploratory gold mining venture. The venture could pay back 50 to 100 times the investment if successful. If the mine is a bust, the entire investment is worthless. Your friend estimates the chance of success is only 20%. If you had the money, how much would you invest?	1	4	2,27	0,90	
DOSPERT score	30	210	3,14	0,75	0,86
1. Admitting that your tastes are different from those of a friend.	1	7	5,97	1,21	
2. Going camping in the wilderness.	1	7	3,42	1,99	
3. Betting a day's income at the horse races.	1	7	2,20	1,71	
4. Investing 10% of your annual income in a moderate growth diversified fund.	1	7	3,95	1,58	
5. Drinking heavily at a social function.	1	7	2,52	1,67	
6. Taking some questionable deductions on your income tax return.	1	7	3,43	1,24	
7. Disagreeing with an authority figure on a major issue.	1	7	4,13	1,71	
8. Betting a day's income at a high-stake poker game.	1	7	1,78	1,42	
9. Having an affair with a married man/woman.	1	7	2,36	1,66	
10. Passing off somebody else's work as your own.	1	7	1,84	1,29	
11. Going down a ski run that is beyond your ability.	1	7	2,40	1,58	
12. Investing 5% of your annual income in a very speculative stock.	1	7	2,21	1,56	
13. Going whitewater rafting at high water in the spring.	1	7	2,86	1,92	
14. Betting a day's income on the outcome of a sporting event.	1	7	2,43	1,68	
15. Engaging in unprotected sex.	1	7	2,08	1,58	
16. Revealing a friend's secret to someone else.	1	7	1,68	1,22	
17. Driving a car without wearing a seat belt.	1	7	2,07	1,57	
18. Investing 10% of your annual income in a new business venture.	1	7	4,09	1,71	
19. Taking a skydiving class.	1	7	3,69	2,19	
20. Riding a motorcycle without a helmet.	1	7	2,28	1,77	
21. Choosing a career that you truly enjoy over a more secure one.	1	7	5,29	1,45	

22. Speaking your mind about an unpopular issue in a meeting at work.	1	7	5,41	1,40	
23. Sunbathing without sunscreen.	1	7	3,97	1,92	
24. Bungee jumping off a tall bridge.	1	7	2,70	2,00	
25. Piloting a small plane.	1	7	3,27	2,15	
26. Walking home alone at night in an unsafe area of town.	1	7	3,43	1,80	
27. Moving to a city far away from your extended family.	1	7	3,58	1,94	
28. Starting a new career in your mid-thirties.	1	7	4,88	1,83	
29. Leaving your young children alone at home while running an errand.	1	7	2,46	1,77	
30. Not returning a wallet you found that contains $200.	1	7	1,85	1,53	
NPI-16 score	0	16	4,79	0,19	0,88
1. I know that I am good because everybody keeps telling me so. (n) When people compliment me I sometimes get embarrassed.	0	1	0,33	0,47	
2. I like to be the center of attention. (n). I prefer to blend in with the crowd.	0	1	0,24	0,43	
3. I think I am a special person. (n) I am no better or worse than most people.	0	1	0,12	0,33	
4. I like having authority over people. (n) I do not mind following orders.	0	1	0,25	0,45	
5. I find it easy to manipulate people. (n) I do not like it when I find myself manipulating people.	0	1	0,41	0,51	
6. I insist upon getting the respect that is due to me. (n) I usually get the respect that I deserve.	0	1	0,59	0,52	
7. I am apt to show off if I get the chance. (n) I try not to be a show off.	0	1	0,35	0,51	
8. I always know what I am doing. (n) Sometimes I am not sure of what I am doing.	0	1	0,21	0,46	
9. Everybody likes to hear my stories. (n) Sometimes I tell good stories.	0	1	0,24	0,50	
10. I expect a great deal from other people. (n) I like to do things for other people.	0	1	0,22	0,50	
11. I really like to be the center of attention. (n) It makes me uncomfortable to be the center of attention.	0	1	0,47	0,58	
12. People always seem to recognize my authority. (n) Being an authority does not mean that much to me.	0	1	0,19	0,52	
13. I am going to be a great person. (n) I hope I am going to be successful.	0	1	0,59	0,61	

14. I can make anybody believe anything I want them to. (n) People sometimes believe what I tell them.	0	1	0,42	0,63	
15. I am more capable than other people. (n) There is a lot that I can learn from other people.	0	1	0,15	0,55	
16. I am an extraordinary person. (n) I am much like everybody else.	0	1	0,12	0,55	
NARQ score	18	108	2,81	0,65	0,83
1. I am great.	1	6	3,20	1,30	
2. I will someday be famous.	1	6	2,52	1,30	
3. I show others how special I am.	1	6	2,74	1,27	
4. I react annoyed if another person steals the show from me.	1	6	2,02	1,09	
5. I enjoy my successes very much.	1	6	5,01	1,05	
6. I secretly take pleasure on the failure of my rivals.	1	6	2,42	1,49	
7. Most of the time I am able to draw people's attention to myself on conversations.	1	6	4,24	1,17	
8. I deserve to be seen as a great personality.	1	6	2,65	1,33	
9. I want my rivals to fail.	1	6	2,23	1,46	
10. I enjoy it when another person is inferior to me.	1	6	1,64	0,98	
11. I often get annoyed when I am criticized.	1	6	2,61	1,27	
12. I can barely stand it if another person is at the center of events.	1	6	1,82	1,06	
13. Most people won't achieve anything.	1	6	3,47	1,84	
14. Other people are worth nothing.	1	6	1,33	0,70	
15. Being a very special person gives me a lot of strength.	1	6	3,18	1,56	
16. I manage to be the center of attention with my outstanding contributions.	1	6	2,95	1,35	
17. Most people are somehow losers.	1	6	2,08	1,30	
18. Mostly, I am very adept at dealing with other people.	1	6	4,41	1,17	

Note: N = 1192. N is the number of observations; Min. is the minimum; Max. is the maximum; SD is standard deviation; α is the Cronbach's alpha. Responses consistent with narcissism on NPI-16 are identified with (n).